SOUTH DAKOTA
MATERNAL AND CHILD HEALTH NEEDS ASSESSMENT

South Dakota Department of Health
Office of Family Health
615 East Fourth Street
Pierre, South Dakota 57501-1700

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INTRODUCTION

The South Dakota Maternal and Child Health (MCH) Needs Assessment, July 2005, provides an overview of the various health indicators of the MCH population in South Dakota.

In November 2004, the Department of Health (DOH) launched the *Department of Health 2010 Initiative*. This initiative provides a clear, concise blueprint for the future activities of the department.

The first page of the DOH 2010 Initiative outlines the goals and objectives for the department as well as key performance measures which will allow the department to monitor progress toward these goals. The second page of the Initiative provides detailed action steps for each goal to help guide department activities. Additionally, specific individuals have been assigned with the responsibility of leading the action steps needed to attain each of the 13 objectives. A copy of the *Department of Health 2010 Initiative* is included in the Appendix A.

The South Dakota MCH program primarily focuses on the goal of "improving birth outcomes and health of infants, children and adolescents in South Dakota." The MCH five-year needs assessment provides an ongoing report on the status of the priorities established by MCH program as required by the MCH Block Grant program. Identified priority needs in South Dakota cross the four levels of the public health services pyramid and are as follows:

- Reduce unintended pregnancies;
- Reduce infant mortality;
- Improve pregnancy outcomes;
- Reduce morbidity and mortality among children and adolescents;
- Improve adolescent health and reduce risk-taking behaviors (i.e., intentional and unintentional injuries, dietary habits, tobacco use, alcohol use, and other drug utilization);
- Improve the health of, and services for, CSHCN through comprehensive services and support;
- Improve and assure appropriate access to health services that are focused on families, women, infants, children, adolescents, and CSHCN;
- Improve state and local surveillance and data collection and evaluation capacity; and
- Reduce childhood obesity.

The priority setting process is an ongoing and evolving process. Systems development for women, infants, children, adolescents, and CSHCN is an integral part of the MCH planning process and includes analyzing of current programs and services, identifying gaps in services, establishing appropriate goals and objectives, collaborating with partners, and establishing methods for monitoring and evaluating programs and services to ensure that goals and objectives are met. The MCH team has used the CAST-5 self assessment tool to examine existing capacity and assist programs in aligning efforts within an overall system and population-based approach and smaller workgroups have been established to start to address the identified needs in data capacity and infrastructure building.

The MCH team also initiated a MCH Assessment, Planning and Monitoring Process which is data driven, with the starting point of assessing the needs of the MCH population groups using Title V health status and system capacity indicators, performance measures, and other quantitative and qualitative data. The process focuses on needs, priorities, targets, and activities -- not specific programs or individuals. The MCH Team began the process with the child and adolescents population group. The Team discussed national and state performance measures, determining if objectives were met or unmet. Health system capacity and health status indicators, and data sets used were analyzed. Additional data sources to assist in assessment of this population group were identified. Ongoing and emerging issues impacting this population group were also identified. As a result of this process, a matrix was developed that identified needs, data sources, performance measures and indicators relevant to the needs, linkage to HP 2010 Objectives, gaps in data or data needs, and identification of a lead agency. The MCH Team then determined level of responsibility relative to the MCH Program. This process allowed for prioritization of the needs of this population group and the role of MCH in addressing them. Current activities and new or proposed activities were discussed to meet the needs, as prioritized.

While specific meetings were not held with partners during the needs assessment process, in South Dakota the MCH program interacts daily with the MCH population and partners (i.e., Departments of Education, Social Services, and Human Services, South Dakota Parent Connection, Office of Highway Safety, etc.). The MCH program used this daily feedback during the prioritization process in order to respond to any identified areas of need and build those recommendations into the needs assessment as it was developed.

As was mentioned above, priority needs in South Dakota, as well as the respective performance measures and activities that address these needs, cross the four levels of the core public health infrastructure pyramid – direct services, enabling services, population-based services, and infrastructure building services.

Direct service interventions will improve health status and reduce adverse outcomes. Since enabling services facilitate and enhance direct services, activities in both levels of the pyramid will address the state's priorities. There are several priority needs that primarily impact the population-based service level. Again, in order to accomplish improvement in the state's priorities, there must be education and service interventions at both the direct and enabling service levels. Conversely, effective interventions at the direct and enabling services levels require the accompaniment of population-based education and other activities.

All state priority needs have elements of infrastructure building services. The development of an interagency collaborative infrastructure is critical to reducing barriers to care and improving health outcomes. Improved state and local surveillance, data collection and evaluation capacity facilitates data-driven decision making regarding allocation of resources and strategies to address the priority needs. Coordination, quality assurance, standards development, and monitoring must accompany interventions to reduce barriers to care and improve and assure appropriate access to health services focused on families, women, infants, children, adolescents, and CSHCN.

A copy of both National and State performance measures are provided in Appendix B.

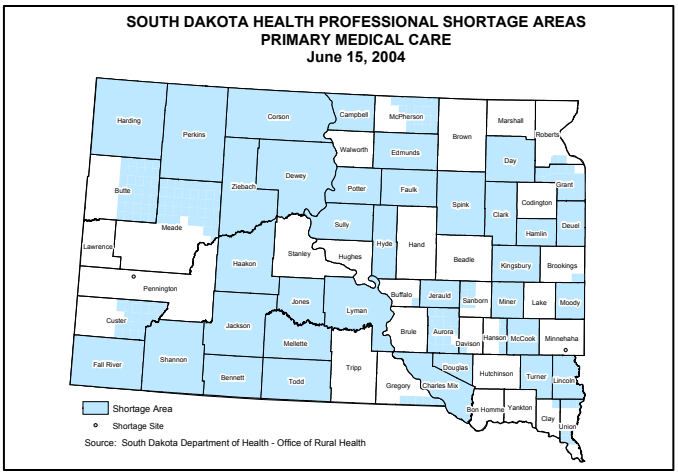
South Dakota is one of the least densely populated states in the nation with 754,844 people living within its 75,955 square miles – an average population density of 9.9 people per square mile (2000 Census). Over half (34) of the state's 66 counties are classified as frontier (population density of less than six persons per square mile) while 29 are considered rural (population density of six or more persons per square mile but no population centers of 50,000 or more). Three counties are classified as urban (have a population center of 50,000 or more). Of the state's total population, 88.7% are White (of which 99.3% are White alone, not Hispanic or Latino), 9.0% are Native American and the remaining 2.3% are classified as some other race.

According to the 2000 Census, 13.2% percent of South Dakotans live below 100 percent of the federal poverty level (FPL) compared to 12.4% for the nation. Over 33 percent (33.1%) of South Dakotans live under 200 percent of the FPL compared to 29.6% for the nation. When looking at poverty levels for counties on Indian reservations in the state, these numbers are significantly higher with the four largest reservations in the state representing the five poorest counties in South Dakota (see Table 1).

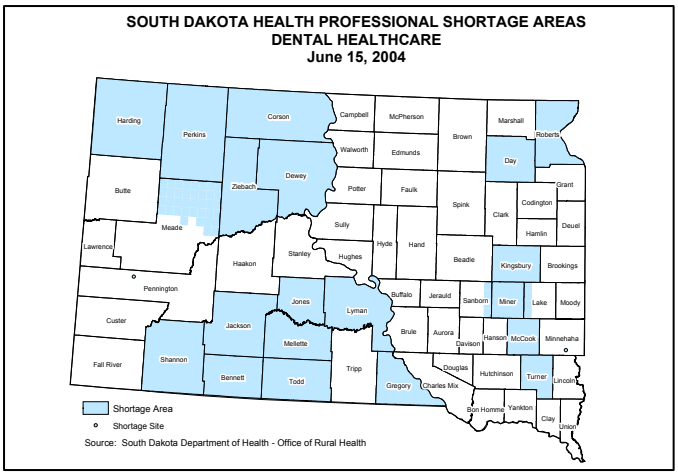
Table 1.
Percent of Population Under the Federal Poverty Level for Reservation Counties in South Dakota

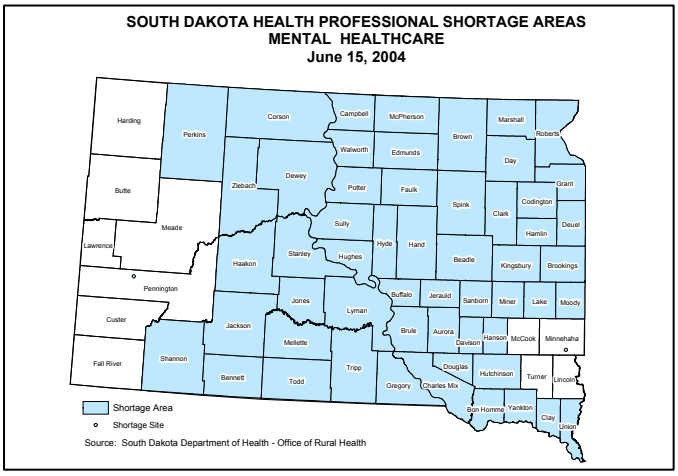
County (Reservation)	100% of FPL	200% of FPL
Dewey (Cheyenne River)	33.6%	66.0%
Ziebach (Cheyenne River)	49.9%	72.1%
Buffalo (Crow Creek)	56.9%	79.9%
Shannon (Pine Ridge)	52.3%	77.7%
Todd (Rosebud)	48.3%	73.4%

According to the 2000 Census, 26.8% of the state's population are children (under the age of 18) while 6.8% is age four or younger. Over forty-one percent (41.5%) of the state's female population is considered to be of childbearing age (aged 15 through 44). South Dakota resident pregnancies totaled 11,846 in 2004 (21 of those were to women not in the 15-44 year age range). Pregnancies were estimated by totaling resident births (pregnancies producing at least one live birth), fetal deaths and abortions.



Access to primary care physicians is limited in the state. According to the South Dakota Board of Medical and Osteopathic Examiners, there were 712 active primary care physicians licensed to practice in South Dakota as of February 2005. Of those, 336 were family physicians, 207 practiced internal medicine, 78 were pediatricians, 58 were OB/GYNs, and 33 were general practitioners. There are also 612 primary care midlevel providers – 305 physician assistants, 291 nurse practitioners and 16 nurse midwives located in the state. About two-thirds of the state is designated by the federal government as a Primary Medical Care Health Professional Shortage Area (HPSA).





Access to dental care is also a concern in South Dakota with less than 300 licensed general practice dentists in the state. The Medicaid program estimates that 80% of the dentists are Medicaid providers. According to the South Dakota State Board of Dentistry, in 2004, there were 273 dentists working in South Dakota. This provides a ratio of one provider to every 2,824 South Dakotans – compared to the national average of one provider for every 1,812 residents. Forty-five percent of South Dakota dentists work in solo practices. South Dakota relies on dental schools in other states to train practitioners for the state.

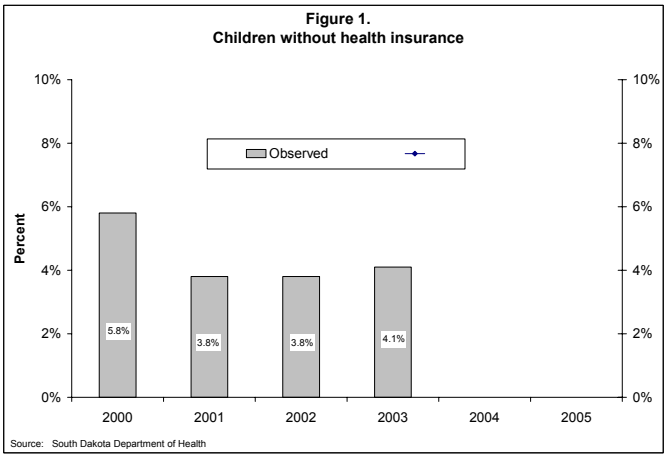
There is a lack of dental service providers for the Native American population on reservations which is a barrier for service utilization in reservation communities. Vacancy rates for dentists are 36% in the Aberdeen Area Indian Health Service (IHS), with little progress toward addressing the gap in provider resources.

Access to mental health providers is even more limited with all but 11 of South Dakota's 66 counties officially designated as Mental Health Care Professional Shortage Areas (MHPSA). The MHPSA designation is given to counties that lack adequate core mental health professionals (defined as psychiatrists, clinical psychologists, clinical social workers, psychiatric nurse specialists, and marriage and family therapists). A survey of workforce status indicate that the state has:

- 5.5 psychiatrists/100,000 population (ranked 45th; national average = 11.1);
- 17.8 psychologists/100,000 population (ranked 45th; national average = 31.2); and
- 279 social workers/100,000 population (ranked 12th; national average = 216) (HRSA, 2000).

South Dakota has 50 general community hospitals, of which 37 are critical access hospitals (CAHs), as well as five IHS hospitals and three Veterans Administration hospitals. There are 28 federally qualified health centers (FQHCs) and 55 rural health clinics.

In 2003, there were 4.1% of South Dakota children without health insurance. This figure has remained steady around 4% since 2001 (see Figure 1). In 2000, there were 5.8% of youth without health insurance. South Dakota was awarded a planning and capacity building grant from the Health Resources and Services Administration (HRSA) to expand and enhance health care coverage.



Children aged 0-5, enrolled in Medicaid prior to July 1, 1998 were required to be at 133% of FPL and children aged 6-18 were to be at 100% of FPL. Pregnant mothers had to be below 133% as well. The Medicaid program was expanded to add the Children's Health Insurance Program (CHIP) effective April 1, 1999. These new guidelines stated that children aged 0-18 were to be under 140% of FPL and pregnant women below 133%. Pregnant women are not eligible for CHIP benefits. Prior to 1999, infants aged 0-1 were not eligible. From 1999-2000, infants and children were required to be at 133% of FPL to be eligible for the program. In 2001, the prerequisite was changed to 200% of FPL (see Table 2).

Table 2.
Number of Children (<19 year of age) Enrolled Medicaid and CHIP

Year	Medicaid	CHIP	Total population <19 years	% population covered
2000	42,102	3,516	215,208	21%
2001	46,070	6,569	210,371	25%
2002	50,221	8,179	209,534	28%
2003	52,548	9,263	206,447	30%
2004	54,609	9,661	203,264	32%

The Census Bureau's Current Population Survey (CPS) estimates the number of children below 200% of FPL who are uninsured in each state. The annual estimates are based on three years of survey data and are updated each year (see Table 3 for South Dakota-specific data). While the number of children living below poverty has decreased since the early 1990s, the percent of uninsured children has changed little.

Table 3.
South Dakota Estimated Number of Uninsured Children (<19 year of age)
U.S. Census Bureau Current Population Survey

Year	Total children < 19 years of age	At or below 200% of FPL	At or below 100% of FPL	% not insured
1993, 1994, 1995	228,000	102,000	15,000	15%
1994, 1995, 1996	217,000	90,000	10,000	11%
1995, 1996, 1997	199,000	82,000	12,000	15%
1996, 1997, 1998	197,000	74,000	12,000	16%
1997, 1998, 1999	197,000	70,000	12,000	17%
1998, 1999, 2000	193,000	64,000	14,000	22%
1999, 2000, 2001	194,000	64,000	9,000	14%
2000, 2001, 2002	198,000	66,000	9,000	14%
2001, 2002, 2003	201,000	66,000	9,000	14%

PREGNANT WOMEN, MOTHERS AND INFANTS

Nationally, it is estimated that approximately half of pregnancies are unintended – either mistimed or unwanted. The appropriateness of combining these two groups into one classification is being questioned since there may be significant differences in service needs between the two. It should also be recognized that a greater number of unintended pregnancies are mistimed pregnancies rather than unwanted.

The consequences of unintended pregnancies are great. Studies indicate mothers are more likely to seek prenatal care after the first trimester or not obtain care altogether. This is greater when the pregnancy is unwanted rather than mistimed. The mother is more likely to expose the fetus to harmful substances such as tobacco or alcohol.

Healthy People 2010 Objective

9.1. Increase the proportion of pregnancies that are intended to 70%.

In South Dakota, results from the 2003 Perinatal Health Risk Assessment indicated that 38% of mothers and 40% of fathers wanted pregnancy later or didn't want pregnancy at all. The rates of intended vs. unintended pregnancies have not deviated from the data collected from 1999-2003. Women at either end of the reproductive age span and women with lower income were more likely to indicate the pregnancy was mistimed or unwanted.

Results of the 2003 Perinatal Health Risk Assessment Survey indicated that 79% of respondents reported not using birth control at the time of conception. More than half of those not using birth control indicted the reason was they wanted to get pregnant at that time. Other reasons for not using birth control included: didn't think could get pregnant; didn't want to use birth control; had side effects from birth control; against religious beliefs, didn't think would have sex; couldn't afford birth control; and husband/partner didn't want to use birth control.

The DOH is the Title X Family Planning grantee for South Dakota. During CY 2004, 13,857 women of reproductive age and 363 men were provided services. While oral contraceptives continue to be the most popular method of birth control with 63% of female users choosing this method, the number of users choosing more efficacious methods is increasing. Between 2003 and 2004, the percentage of females choosing injectable contraceptive increased from 17.5% to 19% while the percentage of females choosing the contraceptive patch increased form 5% to 9% during the same time period. Utilizing the James Trussell formula, an estimated 11,072 pregnancies were prevented during CY04 through utilization of family planning services.

Healthy People 2010 Objective

9.7. Reduce pregnancies among adolescent females to 43 pregnancies per 1,000 females aged 15 to 17 years.

The South Dakota Family Planning Program provides clnical services to 4,357 adolescents under the age of 19 in addition to community and school educational services related to reproductive health. South Dakota Abstinence Education program data shows that approximately 11,880 youth from across the state between the ages of 8-24 heard an abstinence presentation in 2004. Abstinence Education

programs continue to support positive youth development and grow in popularity and success in helping teens postpone sexual activity until marriage, according to evaluations received from youth served by this program and adults working with them. An ongoing data collection system is in place to monitor organizations presenting sexual abstinence messages and to obtain feedback from youth and families.

Healthy People 2010 Objective

16-6. Increase the proportion of pregnant women who receive early and adequate prenatal care beginning in 1st trimester of pregnancy to 90% of live births.

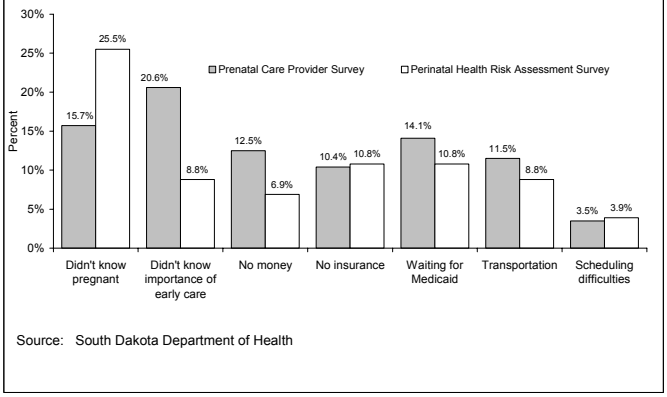
Obtaining early and regular prenatal care is an important component for improving pregnancy outcomes. Many women in the United States receive little or no prenatal care even though there has been support for the importance of prenatal care since the early 20th century. Women beginning care in the third trimester and women receiving no prenatal care are at increased risk for poor pregnancy outcomes. In recognition of this, the DOH established as one of its DOH 2010 Initiative objectives to promote early and regular prenatal care for South Dakota mothers.

According to the 2003 Perinatal Health Risk Assessment, 82.1% of those responding indicated that they were able to get prenatal care as early as they wanted it and 89.9% obtained prenatal care in the first trimester. For those that did not receive prenatal care as early as they wanted, 22.5% responded that it was because they did not know they were pregnant. Birth certificate data from 2004 indicates that 77.5% of all women with pregnancies producing one or more live births sought care in the first trimester. Of note, 57% of Native Americans obtained first trimester prenatal care compared with 83% of white women. There have been no dramatic changes in these numbers over the previous five years.

Access to prenatal care and delivery facilities also remains an issue in South Dakota. Anecdotally, the DOH has been advised that the number of doctors providing prenatal care has decreased significantly over the past several years putting an increasing burden on those physicians continuing to provide that service. In 1990, 48 hospitals in the state had 10 or more deliveries per year. In 2003, that number dropped to 31, with 19 of those hospitals recording 50 or more births per year. The DOH was also recently notified that two more hospitals in the state ceased delivering babies as of July 1, 2005.

In 2005, the DOH conducted a survey of prenatal care providers to solicit their views regarding prenatal care. Figure 2 outlines reasons cited by providers and reasons moms indicated that they did not receive prenatal care in the first trimester. While providers feel that mothers do not understand the importance of early and regular prenatal care, this was not demonstrated in the mothers' responses.

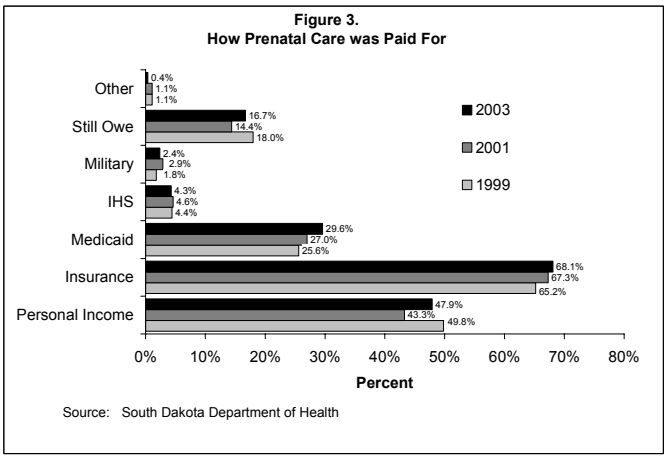
Figure 2.
Reason Prenatal Care Not Received in 1st Trimester

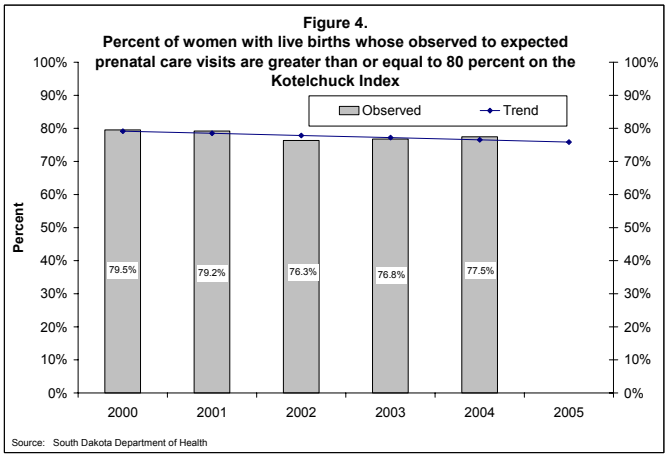


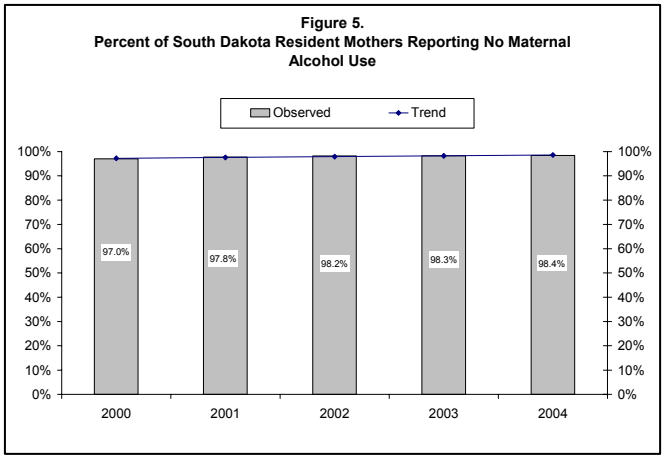
Source: South Dakota Department of Health

Private insurance and Medicaid are the two most prevalent sources of prenatal care payment in South Dakota (see Figure 3). Medicaid utilization has increased since 1999, up from 65.2% to the current rate of 68.1%. Private insurance payment

has also increased since 1999. In 1999, 65.2% of all prenatal care was paid for by insurance, while the current rate is 68.1%.



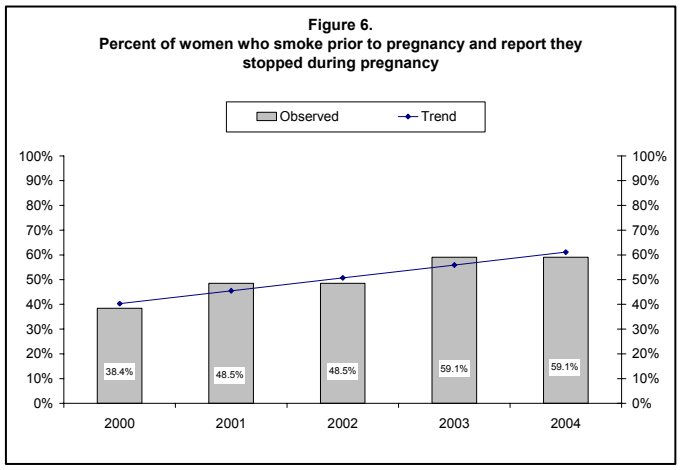




There is a significant difference in utilization of prenatal services in the first trimester among Medicaid and non-Medicaid women. In 2003, only 70% of Medicaid women accessed prenatal care in the first trimester, while 83% of non-Medicaid women did so.

The Kotelchuck Index uses birth certificate data to assess the adequacy of prenatal care utilization and classifies the start of prenatal care and the number of prenatal visits. An Index value of 80% and greater is considered adequate. The Index does not measure the quality of prenatal care. In South Dakota, between 2000 and 2004, the percent of mothers with a Kotelchuck index of ≥ 80% decreased slightly (Figure 4). Over the five-year observation period there were 52,911 qualifying births with 41,182 (78%) achieving ≥80% Kotelchuck Index. The 80% achievement rates ranged from 76% to 79% during the five year period.

According to 2004 birth certificate data, 2% of South Dakota mothers reported consuming alcohol while pregnant. The percent of mothers not drinking alcohol while pregnant has gradually increased since 1999 (see Figure 5). From 1989-2004, there has been a drastic reduction in the alcohol use reported among South Dakota mothers. In 1989, 13.3% reported using alcohol, compared to the current rate of 2%.

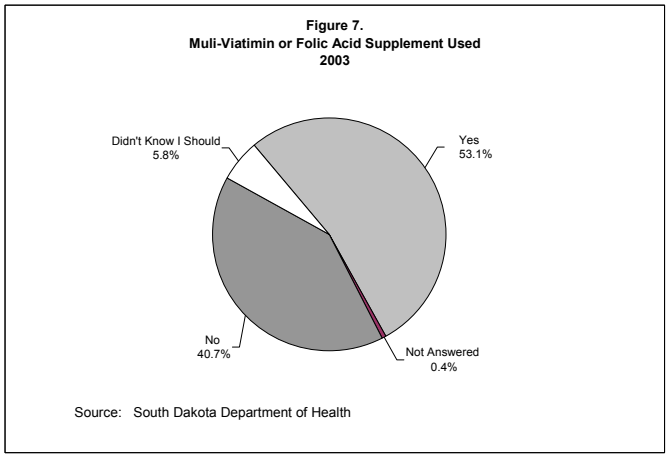


The percent of women who smoked prior to pregnancy and stopped during pregnancy has improved since 2000 (38%). The 2004 data indicates that 59% of women did in fact stop smoking during their pregnancy (see Figure 6).

Healthy People 2010 Objective

16-6a. Increase to 80% the consumption of at least 400 mg of folic acid each day from fortified foods or dietary supplements by non-pregnant women aged 15-44 years.

Up to 80% of neural tube defects can be prevented if the mother has adequate folic acid levels one month prior to conception through the first three months of pregnancy. The Healthy People (HP) 2010 goal is to increase to 80% the consumption of at least 400 micrograms of folic acid each day from fortified foods or dietary supplements by non-pregnant women aged 15-44 years. Just over 40 percent (40.7%) of South Dakota mothers reported that they had not taken a folic acid supplement or a multi-vitamin with folic acid prior to their most recent pregnancy, with 5.8% reporting that they never knew that they should (see Figure 7). While 53.1% of South Dakota mothers indicated using a folic acid supplement, there is still much work to do if the 2010 objective is to be met.



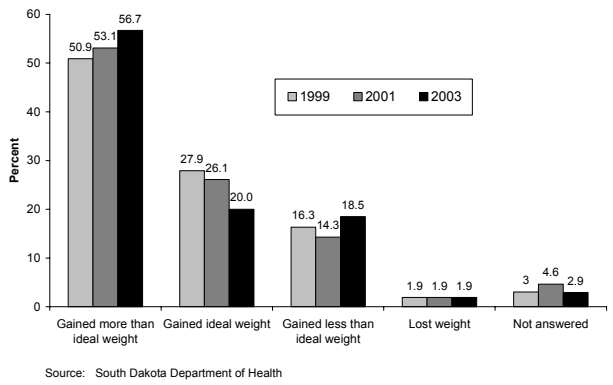
Fish can be an important part of a balanced diet for pregnant women but some fish contain high levels of methylmercury that can harm an unborn child if eaten regularly. According to the 2003 South Dakota Perinatal Health Risk Assessment, almost one third (32%) of women remembered receiving information about eating certain kinds of fish during their pregnancy and less than one percent (0.9%) reported consuming meals that included fish containing high levels of mercury (i.e., swordfish, King Mackerel, shark, or tilefish).

Healthy People 2010 Objective

16-12. Increase the proportion of mothers who achieve a recommended weight gain during their pregnancies.

The South Dakota Perinatal Health Risk Assessment asked questions regarding height, pre-pregnancy weigh and weight at time of delivery. Data indicate that only 20% of the mothers gained the ideal amount of weight during their most recent pregnancy (see Figure 8). Of particular concern is the 56.7% who gained more than the ideal weight. This results in additional women being overweight or obese during the postpartum

Figure 8.
Weight Gain During Pregnancy



Source: South Dakota Department of Health

According to the latest research, another association with low birth weight may be periodontal disease. When a pregnant woman takes care of her health, including her teeth and gums, she is increasing the probability of her baby will be a healthy birth weight. The American Dental Association recommends that every expectant mother have a complete oral exam prior to or very early in pregnancy.

All necessary dental work should be completed early on in the pregnancy. Pregnancy often motivates women to change habits that may affect the health of her teeth and gums, as well as the health of the unborn baby.

Fifty-eight percent of the women surveyed in the 2003 Perinatal Health Risk Assessment have been to the dentist in the past year. Over half of the women had their teeth cleaned while 41% remember their dental provider either educating them or providing information on how to care for their teeth during pregnancy. Seventy-five percent of the women surveyed stated that they had no dental problems throughout the duration of their pregnancy.

period and for subsequent pregnancies. Women who are overweight or obese have increased difficulty becoming pregnant and suffer increased complications of pregnancy.

Also, 18.5% gained less than the ideal weight. Inadequate weight gain is associated with an increased risk of intrauterine growth retardation (IUGR), low birth weight, and infant death.

Last Visit To Dentist or Dental Office

Within the past year	57.6%
Within the past 2 years	20.8%
Within the past 5 years	11.7%
5 years or more	7.5%
Never	0.8%
Not Answered or Unknown	1.6%

How Long Since Last Teeth Cleaning

Within the past year	50.8%
Within the past 2 years	20.5%
Within the past 5 years	14.3%
5 years or more	8.9%
Never	2.9%
Not Answered or Unknown	2.6%

Problems With Teeth Or Gums During Pregnancy

No	75.4%
Yes	24.4%
Not Answered	0.2%

Able To See A Dentist For Treatment

Yes	55.7%
No	42.6%
Not Answered	1.7%

Early identification of pregnancy risk factors can be an asset in providing client centered prenatal services to pregnant women. When risk factors are identified, closer monitoring of progress generally occurs, allowing for problems to be detected earlier and appropriate interventions rendered. From 2000 to 2004, 6% to 7% of South Dakota babies were born weighing less than 2,500 grams. Of those, one percent weighed less than 1,500 grams at birth.

The rate of low birth weight among South Dakota newborns has increased over the past five years, 2000 to 2004. The percent of live newborns weighing less than 2,500 grams increased 11% from 6.2% in 2000 to 6.9% in 2004 (see Figure 9). The percent of singleton newborns weighing less than 2,500 grams increased 15% from 4.8% in 2000 to 5.5% in 2004 (see Figure 10).

Figure 9.
Percent of live births weighing less than 2,500 grams

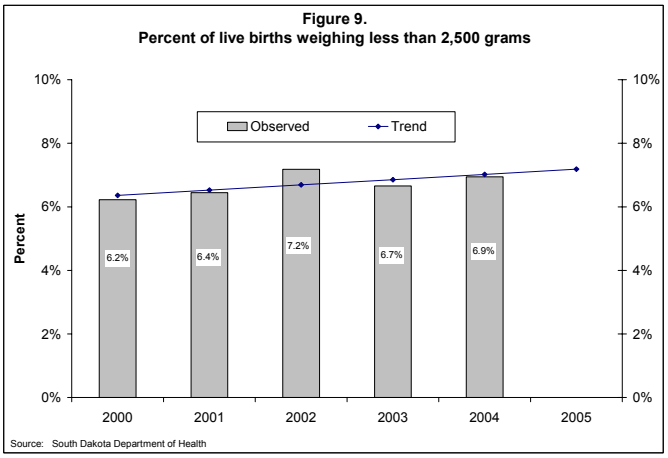
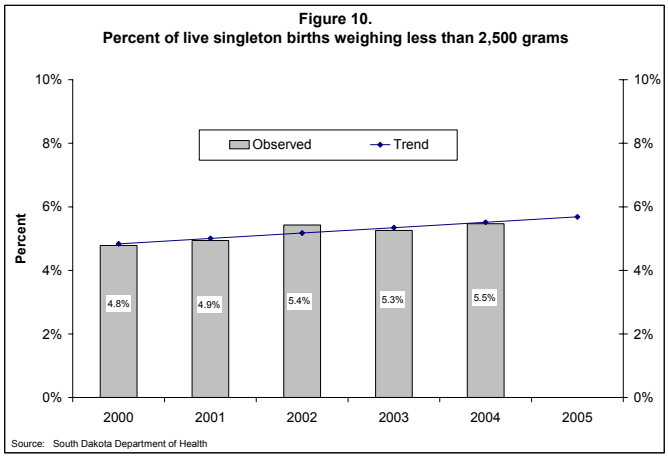


Figure 10.
Percent of live singleton births weighing less than 2,500 grams



The rate of very low birth weight newborns also increased. The percent of newborns weighing less than 1,500 grams increased 33% from 0.9% in 2000 to 1.2% in 2004 (Figure 11). The percent of singleton newborns weighing less than 1,500 grams increased 29% from 0.7% in 2000 to 0.9% in 2004 (see Figure 12).

Figure 11.
Percent of live births weighing less than 1,500 grams

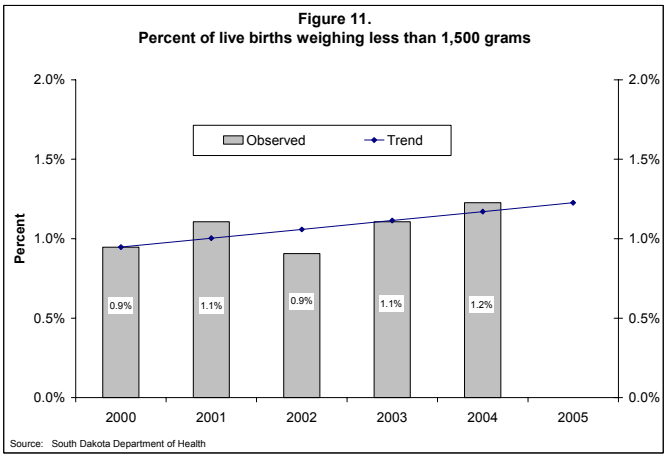
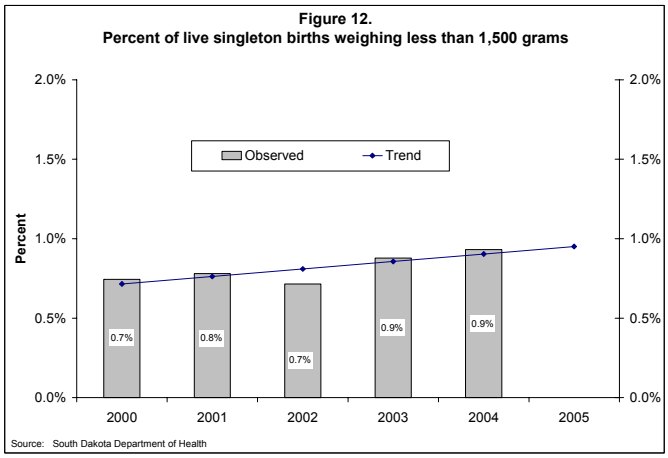


Figure 12.
Percent of live singleton births weighing less than 1,500 grams



Low birth weight is an indicator that is varying between Medicaid and non-Medicaid mothers. In 2003, 8% of babies born to Medicaid mothers were <2,500 grams as compared to 6% of non-Medicaid babies. The rate of infant deaths among the two groups varies greatly as well. The

2003 Medicaid infant death rate was 8.4 per 1,000 live births compared to the non-Medicaid rate of 5.5 per 1,000. Although the rates have improved considerably since 1999, the disparities among the Medicaid and non-Medicaid population are still apparent (see Table 3).

Table3.
Comparison of Medicaid vs. Non-Medicaid Population

	1999			2000			2001			2002			2003		
	Medicaid	Non-Medicaid	All	Medicaid	Non-Medicaid	All	Medicaid	Non-Medicaid	All	Medicaid	Non-Medicaid	All	Medicaid	Non-Medicaid	All
% of low birth weight (<2,500 grams)	7.1	5.4	5.9	8.1	5.2	6.2	7.1	6.1	6.4	8.0	6.7	7.2	7.9	5.9	6.7
Infant deaths per 1,000 live births	14.4	6.6	8.9	7.3	4.1	5.5	7.8	7.3	7.4	8.9	5.2	6.5	8.4	5.5	6.6
% of infants born to pregnant women receiving prenatal care beginning in 1st trimester	75.3	86.1	83.2	68.7	83.3	78.3	68.2	83.5	78.1	69.0	82.4	77.5	70.2	83.0	78.2
% of pregnant women with adequate prenatal care (observed to expected prenatal visits greater than or equal to 80% [Kotelchuck Index]).	73.0	78.9	77.2	75.4	81.7	79.5	75.5	81.2	79.2	73.5	78.0	76.3	73.9	78.6	76.8

With advanced technology, mortality rates for very low birth weight infants (weighing <1,500 grams at birth) have shown a moderate decrease over the past five years. In 1999, there were 36 deaths of infants weighing less than 1,500 grams and 12 deaths of infants weighing between 1,500 and 2,500 grams. In 2003, deaths of very low birth weight infants decreased to 28, whereas deaths to infants between 1,500 and 2,500 grams remained steady. Table 4 outlines those deaths from 1999-2003.

Table 4.
South Dakota Resident Low and Very Low Birth Weight Infant Deaths

Year of Death	Less than 1,500 grams at birth			Between 1,500 and 2,500 grams at birth		
	Neonatal	Post-Neonatal	Total	Neonatal	Post-Neonatal	Total
1999	31	5	36	10	2	12
2000	22	3	25	4	1	5
2001	20	4	24	9	6	15
2002	23	2	25	9	2	11
2003	21	7	28	6	6	12

Healthy People 2010 Objective

16-10. Reduce low birth weight (LBW) and very low birth weight (VLBW)

- Low birth weight to 5%
- Very low birth weight to 0.9%

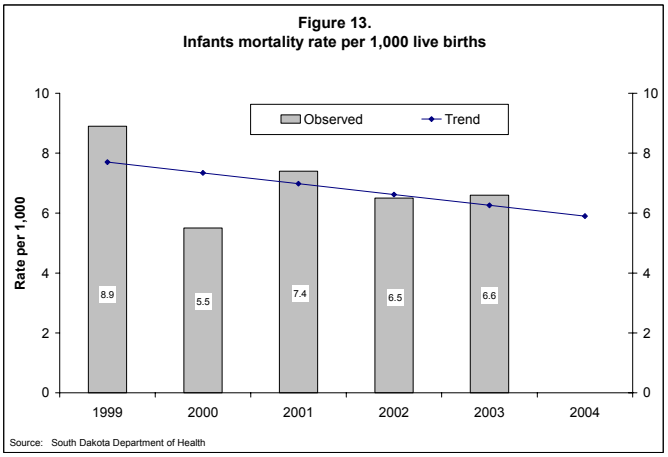
The March of Dimes is investing millions in research and education and awareness programs to find the causes of premature birth, and develop ways to save babies from being born too soon. The Department of Health is partnering with the March of Dimes on efforts to reduce the rate of prematurity. According to the March of Dimes 2002 PeriStats data, there were 1,204 preterm births in South Dakota, representing 11.3% of live births. Between 1992 and 2002, the rate of infants born preterm in South Dakota increased more than 25%. In 2002, 1 in 9 babies (11.3% of live births) was born preterm in South Dakota. This information was obtained from the DOH vital statistics office.

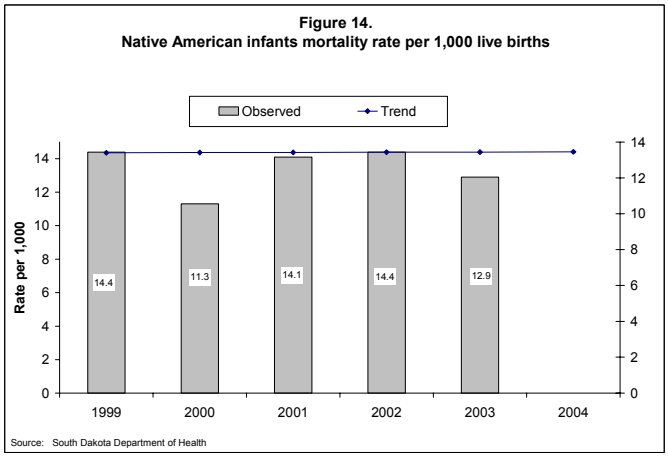
Premature (born at <37 weeks gestation) and low birth weight (weighing < 2,500 grams at birth) infants born in hospitals with tertiary care facilities have better survival rates. In South Dakota, only three facilities offer services at a tertiary level. Table 5 reflects the percentage of total low and very low birth weight infants born in South Dakota at these three facilities over the last six years.

Table 5.
Percent of Low Birth Weight Infants Born at Tertiary Care Facilities

Year	< 1500 grams	< 2,500 grams
1999	86.1%	65.9%
2000	83.7%	67.9%
2001	81.0%	66.4%
2002	80.4%	69.3%
2003	90.2%	68.7%
2004	88.5%	68.1%

There was a median of 10,516 annual births and a median of 73 annual infant deaths in South Dakota during the five-year period 1999-2003 (see Figure 13). The infant mortality rate decreased 26% between 1999 and 2003. The infant mortality rate in 1999 was 8.9 deaths per 1,000 live births, decreasing to 6.6 in 2003. A disparity exists between the death rates of White and American Indian infants. The five-year median infant mortality rate for White infants was 5.0, whereas the American Indian rate was 2.8 times higher at 14.1 deaths per 1,000 births (see Figure 14). Other races, making up a small portion of the state's population, accounted for a median of three annual infant deaths during the observation period.





Healthy People 2010 Objective

16-4. Reduce maternal deaths to 3.3 maternal deaths per 100,000 live births.

CDC has defined maternal deaths in two broad categories:

- *Pregnancy-associated maternal death* – The death of any woman from any cause, while she is pregnant or within one calendar year of termination of pregnancy, regardless of duration and site of pregnancy;
- *Pregnancy-related maternal death* – The death of any woman resulting from complications of the pregnancy itself, the chain of events initiated by the pregnancy that led to the death or aggravation of an unrelated condition by the physiologic or pharmacological effects of the pregnancy that subsequently caused death.

Between 1999-2004, there were four maternal deaths in South Dakota. Two were pregnancy-associated, and two were pregnancy-related. In this period of time, there were a total of 64,396 live births. Tables 6 and 7 show medical-related pregnancy risk factors and complications of labor and delivery that can impact birth outcome.

Table 6.
Pregnancy Medical Risk Factors

	2004		2003		2002		2001		2000	
	n	%	n	%	n	%	n	%	n	%
Pregnancies producing one or more live birth	11,143		10,864		10,521		10,295		10,204	
None	8,597	77.2%	8,403	77.3%	8,103	77.0%	7,756	75.3%	7,605	74.5%
Anemia (Hct. <30/Hgb. <10)	221	2.0%	185	1.7%	180	1.7%	164	1.6%	188	1.8%
Cardiac disease	30	0.3%	37	0.3%	27	0.3%	40	0.4%	30	0.3%
Acute or chronic lung disease	51	0.5%	63	0.6%	70	0.7%	45	0.4%	68	0.7%
Diabetes, gestational	336	3.0%	313	2.9%	314	3.0%	288	2.8%	260	2.5%
Diabetes, pre-existing	75	0.7%	68	0.6%	80	0.8%	67	0.7%	63	0.6%
Genital herpes	53	0.5%	52	0.5%	46	0.4%	49	0.5%	64	0.6%
Hydramnios/Oligohydramnios	280	2.5%	266	2.4%	277	2.6%	261	2.5%	244	2.4%
Hemoglobinopathy	5	0.0%	0	0.0%	4	0.0%	2	0.0%	2	0.0%
Hypertension, chronic	94	0.8%	107	1.0%	99	0.9%	78	0.8%	63	0.6%
Hypertension, pregnancy-associated	657	5.9%	565	5.2%	555	5.3%	533	5.2%	584	5.7%
Eclampsia	29	0.3%	13	0.1%	11	0.1%	23	0.2%	29	0.3%
Incompetent cervix	39	0.3%	33	0.3%	45	0.4%	41	0.4%	41	0.4%
Previous infant 4000+ grams	256	2.3%	257	2.4%	214	2.0%	175	1.7%	189	1.9%
Previous preterm or small-for-gestational-age infant	204	1.8%	208	1.9%	185	1.8%	141	1.4%	171	1.7%
Renal disease	15	0.1%	26	0.2%	21	0.2%	31	0.3%	33	0.3%
Blood Group Sensitization	38	0.3%	17	0.2%	24	0.2%	21	0.2%	12	0.1%
Uterine bleeding	49	0.4%	58	0.5%	53	0.5%	55	0.5%	59	0.6%
Other	522	4.7%	612	5.6%	633	6.0%	950	9.2%	927	9.1%
Unknown	0	0.0%	0	0.0%	2	0.0%	5	0.0%	5	0.0%

Note: Medical history factors do not equal the total number of resident births due to multiple factors listed on some birth certificates. The sum of the percents of each factor will total more than 100 since the denominator used is the total number of resident births.

Table 7.
Complications of Labor and Delivery

	2004		2003		2002		2001		2000	
	n	%	n	%	n	%	n	%	n	%
Total Births	11,339		11,022		10,698		10,475		10,346	
None	8,092	71.4%	8,034	72.9%	7,661	71.6%	7,536	71.9%	7,375	71.3%
Abruptio placenta	100	0.9%	74	0.7%	72	0.7%	66	0.6%	77	0.7%
Anesthetic complications	7	0.1%	6	0.1%	4	0.0%	4	0.0%	6	0.1%
Breech/Malpresentation	528	4.7%	532	4.8%	543	5.1%	532	5.1%	491	4.7%
Cephalopelvic disproportion	283	2.5%	247	2.2%	272	2.5%	231	2.2%	310	3.0%
Cord prolapse	22	0.2%	20	0.2%	24	0.2%	13	0.1%	18	0.2%
Dysfunctional labor	518	4.6%	563	5.1%	543	5.1%	509	4.9%	602	5.8%
Febrile (>100°F. or 38°C.)	96	0.8%	95	0.9%	79	0.7%	110	1.1%	84	0.8%
Fetal distress	834	7.4%	672	6.1%	711	6.6%	682	6.5%	664	6.4%
Meconium, moderate/heavy	607	5.4%	567	5.1%	566	5.3%	550	5.3%	549	5.3%
Other	95	0.8%	96	0.9%	139	1.3%	164	1.6%	144	1.4%
Other excessive bleeding	113	1.0%	98	0.9%	98	0.9%	66	0.6%	54	0.5%
Placenta previa	36	0.3%	34	0.3%	33	0.3%	26	0.2%	38	0.4%
Precipitous labor (<3 hours)	255	2.2%	245	2.2%	253	2.4%	207	2.0%	175	1.7%
Premature rupture of membrane (>12 hrs)	278	2.5%	280	2.5%	268	2.5%	240	2.3%	264	2.6%
Prolonged (>20 hours)	125	1.1%	122	1.1%	113	1.1%	136	1.3%	126	1.2%
Seizures during labor	5	0.0%	3	0.0%	1	0.0%	2	0.0%	3	0.0%
Unknown	0	0.0%	0	0.0%	1	0.0%	2	0.0%	2	0.0%

A comprehensive pregnancy risk assessment is to be conducted on all pregnant women who enter services at the DOH Community Health Services (CHS) offices.

In CY04, 3556 risk assessments were completed on pregnant women seeking services within CHS offices as part of the Baby Care program. Of that number, 1,278 (36%), were admitted to Baby Care program services. In addition, 117 (3%), were admitted to the Bright Start program which provides home visiting services to high risk families in Sioux Falls and Rapid City during pregnancy, after delivery, and up to the child's third birthday. Of the 1,278 admitted, 790 or 62%, were Title XIX clients. Twenty-three percent of the risk assessments completed were on clients 19 years of age or younger, and less than 1% were over forty. Twenty-nine percent had less than a 12th grade education at the time the risk assessment was completed, and 22% were still attending school. Fifty-five percent of those risk assessed were employed. Of the 45% who were unemployed, 18% were seeking work. Sixty-six percent of moms were single, and the rate of unintended pregnancy was 59%. Percentages have remained fairly consistent since the computerized data collection program was instituted in 2001.

Healthy People 2010 Objective

27-6. Increase smoking cessation during pregnancy to 30%.

Of the women that were risk assessed, 51% indicated they smoked prior to knowledge of pregnancy. Thirty percent continued smoking after learning they were pregnant. Forty percent of women

lived with someone who smoked and 23% acknowledged being routinely exposed to secondhand smoke. The DOH Tobacco Control Program has as one of its goals to reduce the number of pregnant females that smoke from 19% to 13%. Obtaining their data from BRFSS, it shows a small but steady decline in the overall number of pregnant females that use some form of tobacco. In 1993, tobacco use by pregnant females was 20% for whites and 42% for American Indians. In 2002, tobacco use by pregnant females was 18% for whites and 27% for American Indians.

In contrast, information obtained via the Perinatal Health Risk Assessment (a survey conducted every two years of women who have delivered within a 6 month period of time in the previous year) demonstrated a much different picture. In the 2003 survey, only 27.5% of women returning the survey indicated that they smoked prior to knowledge of pregnancy and 15.2% acknowledged continued tobacco use during pregnancy. Only 11.3% indicated exposure to secondhand smoke. According to birth certificate data, in 2004, 18.6% of women indicated that they had used tobacco during pregnancy. This percentage has been steadily declining each year.

Healthy People 2010 Objective

16-17. Increase abstinence from alcohol among pregnant women to 94%.

Data from the Baby Care Risk Assessment shows that 45% of pregnant moms reported at least occasional use of alcohol prior to knowledge of pregnancy and only 0.5% reported any alcohol use after learning they were pregnant. Five percent indicated they had used illegal drugs but stopped as soon as they knew they were pregnant. Just over five percent (5.5%) stated that their partner or spouse had a problem with alcohol or drugs, and 1% reported that someone else in their household had a problem with alcohol/drugs. Four percent indicated that they do not feel safe in their current living situation and 23% reported that they had at some point in their lives been emotionally, verbally, physically or sexually abused by their spouse/partner or someone close to them. Eleven percent cited a lack of support in their lives and 17.6% indicated they had difficulty securing transportation to meet daily needs.

During the risk assessment, women are asked about their obstetrical history and to respond to 33 risk criteria questions. The following risk factors were cited by greater than 10% of those women risk assessed:

- 20% had less than 12 months between the end of the last pregnancy and conception of the current pregnancy;
- 11.5% experienced preterm labor in the past or current pregnancy;
- 20% had a history of treatment for psychiatric condition; and
- 37% had poor nutrition.

Healthy People 2010 Objective

9.2. Reduce the proportion of births occurring within 24 months of a previous birth to 6 percent.

Another important component in improving pregnancy outcomes is to provide adequate spacing of at least two years between pregnancies. According to 2004 birth certificate data, 18.6% of all births occurred within two years of a prior

birth. Of note, this was seen in 29% of births to Native Americans and 16% of the White population. These percentages have remained consistent for the five years prior.

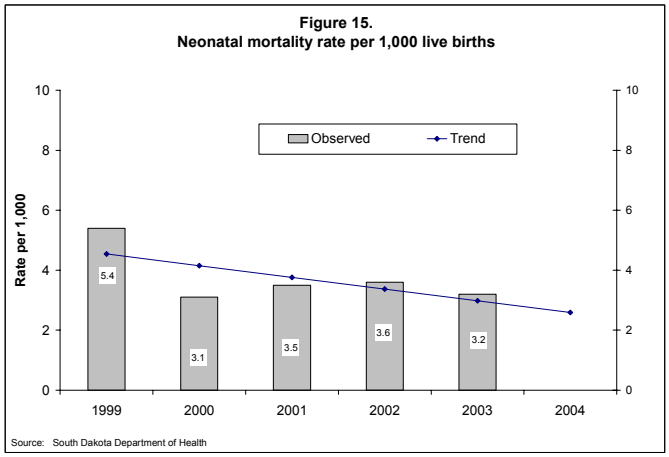
Healthy People 2010 Objectives

16-1c. Reduce infant deaths (within 1 year) to 4.5 per 1,000 live births.

16-1d. Reduce neonatal deaths (within the first 28 days of life) to 2.9 per 1,000 live births

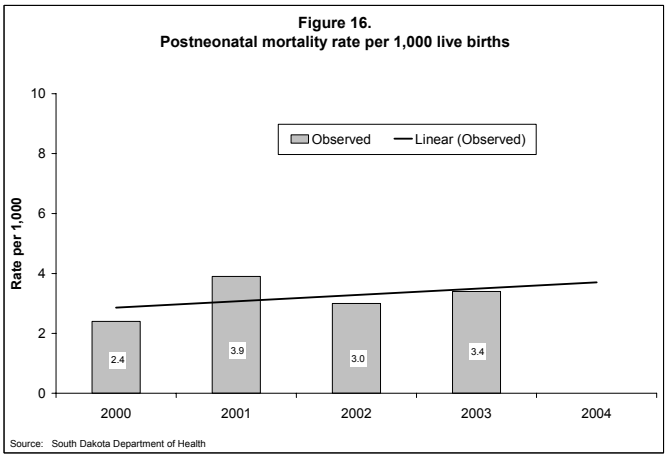
16-1e. Reduce postneonatal deaths (between 28 days and 1 year) to 1.2 per 1,000 live births

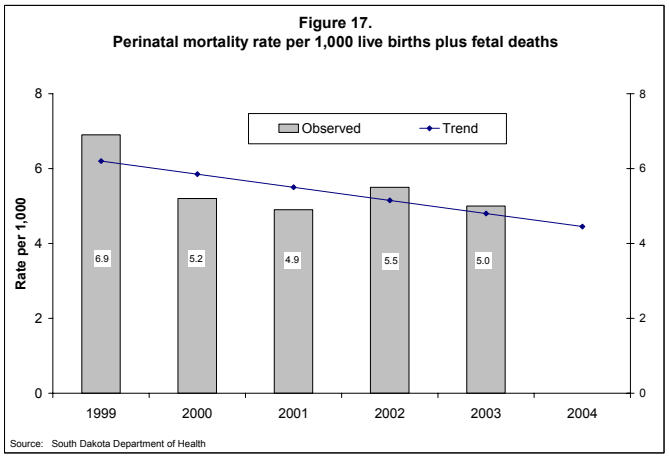
South Dakota's neonatal mortality rate decreased 41% between 1999 and 2004 (Figure 15). There were a median of 37 annual neonatal deaths during this period (deaths during the first 27 days of life). The rate decreased from a rate of 5.4 neonatal deaths per 1,000 births in 1999 to 3.2 in 2003.



South Dakota's post-neonatal mortality rate was essentially unchanged between 1999 and 2004. There were a median of 37 annual neonatal deaths during this period (deaths between day 28 and the first birthday). The death rate fluctuated up and down from a low rate of 2.4 deaths per 1,000 births in 2000 to a high rate of 3.9 in 2001 (Figure 16).

The perinatal mortality rate in South Dakota steadily decreased during the 1999-2003 period. Perinatal mortality is death during the period 28 weeks gestation to one week postnatal. There was an overall 28% decrease in perinatal mortality during the observation period with a high of 6.9 perinatal deaths per 1,000 births and >28 week fetal deaths in 1999, decreasing to a rate of 5.0 in 2003 (Figure 17).





Healthy People 2010 Objective

16-20. Ensure appropriate newborn bloodspot screening, follow-up testing, and referral to services.

South Dakota Codified Law (SDCL) 34-24-17 requires all infants born in South Dakota to be screened for phenylketonuria (PKU), congenital hypothyroidism and galactosemia. In 2004, of the 11,805 births occurring in South Dakota, 11,745 (99.5%) were screened for the mandated disorders. Table 8 shows the number of screens and confirmed cases per mandated disorder during the 2000-2004 time period. The participation with mandated tests has been over 99%.

Table 8.
Newborn Metabolic Screening Results, 2000-2004

	2000	2001	2002	2003	2004
Births Occurring in SD	10,589	10,784	11,015	11,503	11,805
# Screened	10,553	10,744	10,974	11,464	11,745
Number of Resident Cases Confirmed					
Phenylketonuria	0	2	1	0	1
Congenital Hypothyroidism	4	6	3	3	6
Galactosemia	1	0	0	0	0

Optional testing for hemoglobinopathy disorders has been available since 1997 with the participation rate as of September 2004 at 6-9T. Optional supplemental screening has been offered since January 199 with the participation rate in 2004 at over 90%. Beginning June 1, 2005, additional tests were mandated through administrative rules. These include biotinidase deficiency, congenital adrenal hyperplasia, hemoglobinopathy (sickle cell disease), amino acid disorders, fatty acid oxidation disorders, and organic acid disorders. Screening for cystic fibrosis is available on an optional basis.

Healthy People 2010 Objective

28-11. Increase the proportion of newborns who are screened for hearing loss by age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months.

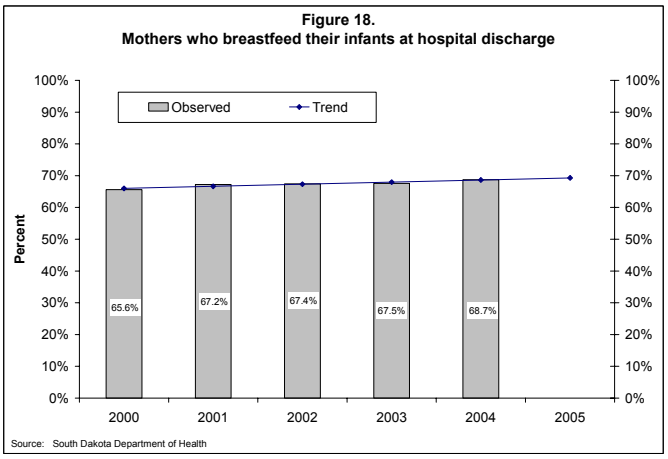
During CY04, 88% of all the newborns born in South Dakota received a hearing screen prior to hospital discharge. There has been a 33% increase in the percent of newborns screened since 2000 when only 66% of infants received a hearing test prior to discharge. The dramatic increase can be attributed to the development and implementation of the Electronic Vital Records and Screening System (EVRSS). This system matches the hearing screening results with the electronic birth certificate which enables data to be collected more efficiently.

Healthy People 2010 Objective

16-19. Increase the proportion of mothers who breastfeed their babies
- In early postpartum period to 75%
- At 6 months to 50%
- At 1 year to 25%

Breastfeeding is the ideal method of feeding an infant. Breastfeeding initiation rates for South Dakota women have been gradually increasing and was 68.7% in 2004 according to the South Dakota newborn screening information (see Figure 18). Breastfeeding rates were also collected for the first time in 2003 via the National Immunization Survey. According to that data, 71.8% of South Dakota infants had ever been breastfed with 36.3% breastfed at 6 months of age and 18.7% breastfed at 12 months of age.

Figure 18.
Mothers who breastfeed their infants at hospital discharge



According to the 2003 South Dakota Perinatal Health Risk Assessment, 90% of women received information about breastfeeding their infant. Of those who received information, 71% breastfed at hospital discharge as compared to 55% who breastfed and reported not receiving information on breastfeeding.

The most common reasons given for not breastfeeding were because the woman didn't want to breastfeed or planned to go back to work or school (20% and 18% respectively). Thirteen percent of respondents didn't think there was enough milk and 12% thought baby didn't breastfeed well. Breastfeeding duration is complicated by the fact that South Dakota has the highest percentage of working mothers of any state (2000 Census Data).

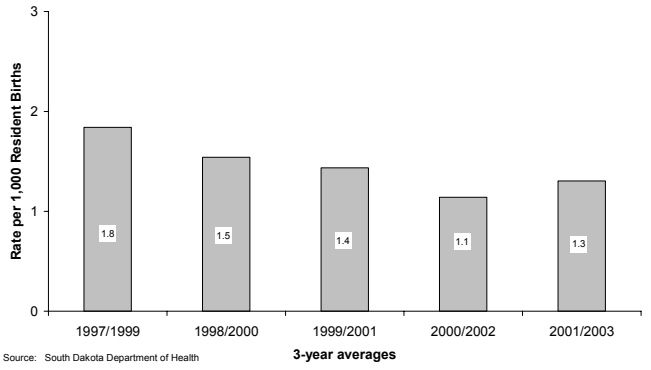
The American Academy of Pediatrics recommends that infants not receive solids until after six months of age. According to the 2003 South Dakota Perinatal Health Risk Assessment, 72% of infants started eating solids prior to six months of age and 17% prior to four months of age.

Healthy People 2010 Objective

- 16-1h. Reduce deaths from sudden infant death syndrome (SIDS) to 0.25 deaths per 1,000 live births.

The incidence of SIDS – the sudden and unexplained death of infants under one year of age – has decreased markedly over the past several years. Currently, about 2,500 infants die each year in the U.S. as a result of SIDS. Between 1999 and 2003, 71 South Dakota children died of SIDS before their first birthday (see Figure 19), accounting for 19% of all deaths in this age group. Thirty-four of these deaths were Native American infants and 36 were White infants.

Figure 19.
Children under age 1 who die as a results of SIDS



Source: South Dakota Department of Health

While the cause of SIDS is unknown, at least two preventable risk factors have been identified that parents can control to reduce the risk of SIDS – placing infants to sleep on their backs and creating a smoke-free environment around the infant. In data collected from the 2003 Perinatal Health Risk Assessment, 82.2% of the moms answering the survey indicated that they put their babies to sleep on their back and another 10.5% responded that their babies were placed on their sides to sleep. Only 7% indicated that there babies slept on their stomachs. The percentage of babies put on their backs to sleep has shown a steady increase since 1999 when 69.5%, and in 2001 when 78.2% acknowledged putting babies to sleep on their backs. Physicians and nurses continue to be the primary source for education on this information.

In the 2003 Perinatal Health Risk Assessment, 75.2% of moms stated that their babies were not exposed to secondhand smoke at all. Just over ten percent (10.5%) indicated that no one smokes in the house or car when the baby is there and another 8.3% indicated that smoking may occur in the house, but not the same room as the baby. Only 3.7% of moms responded that smoking was allowed anytime, anywhere around the baby. These percentages have remained fairly consistent over the past five years. In addition, a question on the survey asks whether or not the parent knew that secondhand smoke increases the risk for SIDS. Of the 91.5% that reported this was true, 2.0% continued to allow smoking anytime, anywhere in the house or car. Of the respondents that believed the statement to be false, 2.5% reported allowing smoking anytime, anywhere in the house or car.

CHILDREN AND ADOLESCENTS

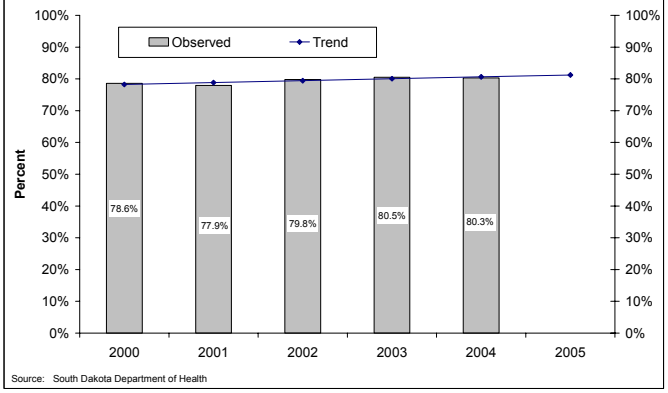
Healthy People 2010 Objective

14-22. Achieve and maintain effective vaccination coverage levels for universally recommended vaccines among young children at 90%.

South Dakota's childhood vaccination coverage rate has increased slightly over the five year period, 2000 to 2004 (Figure 20). Every year the DOH retrospectively records the vaccination status of children entering kindergarten when they were 24 months old. The vaccines monitored are 4 doses of DTaP, 3 doses of polio and 1 dose of MMR. Between 2000 and 2004 the vaccination rate increased from 78.6% in 2000 to 80.3% in 2004. During this same period the CDC's National Immunization Survey (NIS) shows a larger increase for South Dakota from 77.6% in 2000 to 84.6% in 2004 for the 4:3:1:3 vaccines.

The South Dakota Immunization Information System (SDIIS) has been upgraded to a web-based application to help vaccine providers manage immunization records and make sure children get the right vaccines at the right time. There are currently 248 public and private vaccine providers using the system. SDIIS contains over 412,300 patient records and has recorded more than 3.2 million individual immunizations.

Figure 20.
Percent of 19 to 35 month olds who received age appropriate immunizations

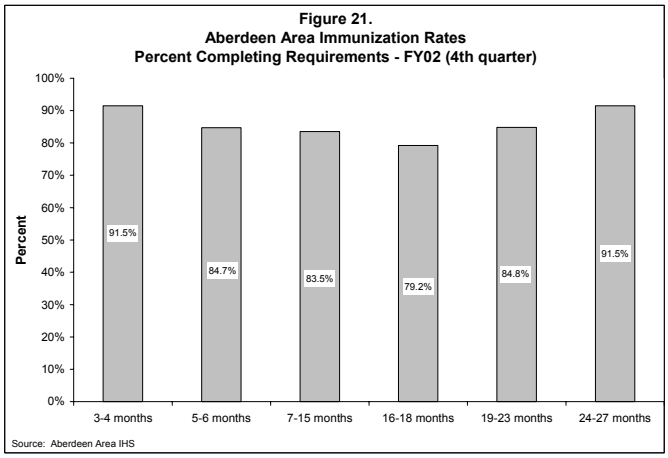


Source: South Dakota Department of Health

In South Dakota, childhood immunizations are a priority. South Dakota Codified Law (SDCL) 13-28-7.1 sets forth the requirements for immunization prior to school entry. Only medical and religious exemptions are allowed. Table 9 provides data from the annual immunization survey in South Dakota of kindergarten, day care and Head Start records.

Table 9.
Rates of Antigen Coverage, 2004

	Kindergarten	Day Care	Head Start
Polio	99%	94%	94%
DTaP	98%	93%	92%
MMR	95%	95%	95%
Hepatitis B	93%		93%
Hib		93%	89%
Varicella	95%		



The DOH continues to work with Aberdeen Area Indian Health Services (IHS) to include data for IHS sites on SDIIS – either through direct entry or through an interface with the current IHS system.

Aberdeen Area IHS submitted data for the 4th quarter of FY 2002 regarding immunization rates for children aged 3-27 months old (see Figure 21).

Healthy People 2010 Objectives

21-1. Reduce the proportion of children and adolescents who have dental caries experience in their primary or permanent teeth
- Children aged 2 to 4 years to 11%
- Children aged 6 to 8 years to 42%
- Adolescents aged 15 years to 41%

21-2. Reduce the proportion of children and adolescents with untreated dental decay
- Children aged 2 to 4 years to 9%
- Children aged 6 to 8 years to 21%
- Adolescents aged 15 years to 15%

21-8. Increase the proportion of children who have received dental sealants on their molar teeth
- Children aged 8 years to 50%
- Adolescents aged 14 years to 50%

A statewide assessment of the oral health status of children was conducted during the 2002-2003 school year. Seven hundred and ten third grade students in 35 randomly selected elementary schools throughout the state were surveyed and screened.

Sixty-seven percent of the third graders had decay experience (i.e., untreated decay or fillings) in the primary and/or permanent teeth. Thirty percent had untreated decay at the time of the screening. The percent of children with untreated decay is assumed to be an underestimation because radiographs were not taken. Over 25% were in need of early dental care with 5% of the third graders in need of urgent dental care because of pain or infection.

Fifty percent of the third graders had a dental sealant on at least one permanent molar. Dental sealants provide an effective way to prevent decay on the chewing surfaces of molars, which are most vulnerable to dental decay. A clear resin is used to cover the "pits and fissures" on the top of the teeth so that cavity-causing bacteria cannot reach areas that are difficult to clean and allowing fluoride to penetrate.

Table 10 provides a summary of the results of the 2002-2003 statewide assessment of the oral health status of children.

Table 10.
Oral Health of South Dakota's Third Grade Students

Variable	% of Children (N=710)	95% Confidence Interval
Caries Free	33.1%	27.0%-39.2%
Caries History	66.9%	60.8%-73.0%
Untreated Decay[1]	30.2%	22.8%-37.5%
Dental Sealants	49.6%	44.2%-55.0%
Treatment Urgency		
– None	70.2%	62.7%-77.7%
– Early	25.3%	18.4%-32.3%
– Urgent	4.5%	2.6%-6.3%

[1] The percent of children with untreated decay is assumed to be an underestimation because radiographs were not taken.

The 2003 Behavioral Risk Factor Surveillance System (BRFSS) included several questions pertaining to oral health and hygiene. According to this data, 90% of children ages 5-17 have been to the dentist. However, only 25% of the children up to age five have visited the dentist (see Table 11). Table 12 provides data for selected oral health issues for children enrolled in Head Start programs in the state.

Table 11.
How Long Since Child Last Visited the Dentist or Dental Clinic?

	Age of Child			
	0-4	**5-9**	**10-14**	**15-17**
Within the past year (1 to 12 months ago)	24.1%	88.9%	92.6%	91.5%
Within the past 2 years (1 to 2 years ago)	0.7%	4.3%	4.9%	5.9%
Within the past 5 years (2 to 5 years ago)	0%	0.2%	1.7%	1.2%
5 or more years ago	0%	0%	0.5%	0.9%
Never	75.2%	6.6%	0.4%	0.6%

Source: South Dakota Behavioral Risk Factor Surveillance System, 2003

Table 12.
South Dakota Head Start Oral Health Data, 2004
(N = 4,533)

	Number	**Percent**
Children with ongoing source of continuous and accessible dental care	3,038	67.0%
Children receiving preventive dental care	1,704	37.6%
Children diagnosed as needing dental treatment	964	21.3%
Children who have received or are receiving treatment	788	17.4%
Children 0-3 receiving dental screening with well-baby exam	456	10.1%
Children 0-3 receiving dental examinations	129	2.8%

Source: 2004 Annual Head Start Profile

The oral health concerns of Native Americans are especially disconcerting. In the Aberdeen Area IHS, recent statistics indicated that 78% of children have tooth decay and 68% of these children go untreated for their tooth disease. The rate of tooth disease among children is over double that of the national average. There is a lack of service providers which continues to be a barrier for service utilization in reservation communities. Vacancy rates for dentists are 36% in the Aberdeen Area, with little progress toward addressing the gap in provider resources.

Drinking fluoridated water has been shown to significantly reduce the risk of developing dental caries. The South Dakota Legislature passed a law in 1969 requiring all public water systems serving 500 or more people that have a natural fluoride content of less than 0.9 mg/L adjust the fluoride level to 1.2 mg/L which is considered to be the optimum level for the prevention of dental caries. The South Dakota Department of Environment and Natural Resources reported that in 2004 there were 592,279 people receiving fluoridated water from 72 public water systems (excluding Indian reservations). Many of the smaller public water systems in South Dakota that serve communities of less than 500 people are either connected, or plan to be connected, to rural water systems which tends to increase the number of citizens being served fluoridated drinking water. Additionally, many of the farmsteads that have utilized private wells in the past are either now connected to a rural water system or plan to be in the future. If the current trend

continues, essentially all public water systems in South Dakota will be serving fluoridated water to consumers.

Access to care continues to be a concern in South Dakota with less than 300 licensed general practice dentists in the state. The Medicaid program estimates that 80% of the dentists are Medicaid providers. According to the South Dakota State Board of Dentistry, in 2004, there were 273 dentists working in South Dakota. This provides a ratio of one provider to every 2,824 South Dakotans – compared to the national average of one provider for every 1,812 residents. Forty-five percent of South Dakota dentists work in solo practices. South Dakota relies on dental schools in other states to train practitioners for the state. The University of South Dakota offers a dental hygiene program that generates 30 graduates annually.

Healthy People 2010 Objective

19-4. Reduce growth retardation among low-income children under age 5 years to 5%.

Growth retardation, or short stature, is defined as those having height-for-age below the fifth percentile. Growth retardation may be evidence of compromised health, delayed development or poor diet. A child's full growth potential may be impaired by compromised nutrition or infectious/chronic diseases. The South Dakota growth retardation/short stature rate for children on the WIC program was 6.1% in CY 2003. This is the same rate as 2002 but an increase from 5.8% in 2001.

Underweight children and infants are those who fall below the fifth percentile in weight-for-height (or BMI-for-age) reference population. Conditions contributing to underweight status include inadequate dietary intake, failure to thrive, chronic and infectious diseases, and other normal variations in the population. According to the 2003 Pediatric Nutrition Surveillance System (PedNSS), among the WIC population in South Dakota, 3.5% of the infants and children were classified as underweight. South Dakota School Height and Weight data reported for the school year 2003-2004 shows 3.0% of South Dakota students were underweight.

Children two years and older whose BMI-for-age is at or above the 95th percentile are defined as overweight while those with a BMI-for-age between the 85th but below the 95th percentile are defined as "at risk of overweight". Children and adolescents who are overweight or at risk of overweight, particularly after age 10 years, have a greater chance of becoming obese at age 25 (Whitaker et al. NEJM: 1997; 337: 869-873).

In 2003, 13.6% of the children 2-5 years old on WIC were overweight and an additional 17.7% at risk of overweight (2003 PedNSS). Rates were higher for American Indian children – 21.0% and 19.1% respectively. The rate of overweight has steadily increased over the years in this preschool population. There are no Healthy People 2010 goals for "at risk of overweight" or for children 2-5 years of age.

Healthy People 2010 Objective

19-3. Reduce the proportion of children and adolescents aged 6-19 years who are overweight to 5%.

South Dakota has collected school height and weight data since the 1998-1999 school year. The data from the 2003-2004 school year showed 15.8% of students 5-19 years of age are overweight (see Figure 22).

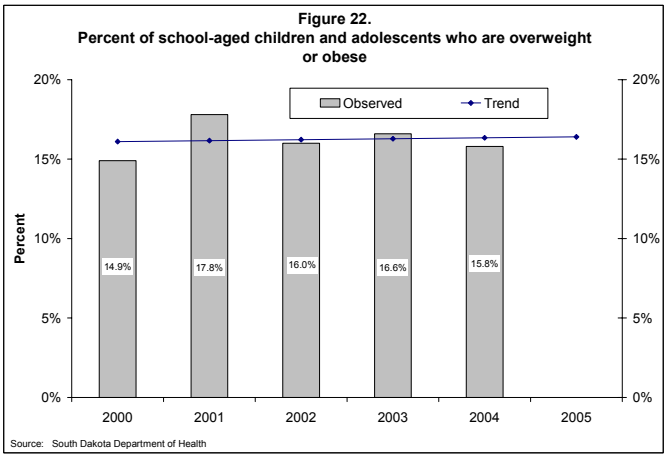


Table 13 provides the BMI-for-age statistics for South Dakota students. These data show that for all of the age groups, South Dakota will need to substantially reduce the number of overweight children in order to meet the Healthy People 2010 objective of 5%.

South Dakota students who were White had lower rates of overweight and at risk of overweight than the state totals while Native Americans and other races had higher rates than the state totals (see Table 14).

Table 13.
At Risk for Overweight and Overweight
Body Mass Index for Age
School Year 2003-2004

Age	Number of Students	At Risk for Overweight	Overweight	At Risk for Overweight & Overweight Combined
5-8 years	8,952	15.1%	13.0%	28.1%
9-11 years	9,767	16.7%	17.7%	34.4%
12-14 years	6,347	16.5%	17.0%	33.5%
15-19 years	2,179	16.6%	14.9%	31.5%
TOTAL	27,245	16.1%	15.8%	31.9%

Table 14.
At Risk for Overweight and Overweight
Body Mass Index for Age, By Race
School Year 2003-2004

Race	Number of Students	At Risk for Overweight	Overweight	At Risk for Overweight & Overweight Combined
White	21,114	15.7%	14.2%	29.9%
American Indian	3,357	18.1%	25.8%	43.9%
Other Races	815	17.2%	18.1%	35.3%
Race Unknown	1,959	16.8%	14.8%	31.6%
TOTAL	27,245	16.1%	15.8%	31.9%

Rates are about three times the Healthy People 2010 goals.

According to the 2003 Youth Risk Behavior Survey (YRBS), 52% of South Dakota high school students think of themselves as about the right weight while 50% are trying to lose weight. Sixty percent of South Dakota adolescents exercised to lose weight or to keep from gaining weight during the past 30 days while 43% of them ate less food, fewer calories, or foods low in

fat to lose weight or to keep from gaining weight during the past 30 days. However, 15% of them reported going without eating for 24 hours or more to lose weight or to keep from gaining weight during the past 30 days, 8% took diet pills, powders, or liquids without a doctor's advice and 7% vomited or took laxatives to lose weight or to keep from gaining weight during the past 30 days.

Healthy People 2010 Objectives

19-5. Increase the proportion of persons aged 2 and older who consume at least two daily servings of fruit to 75%.

19-6. Increase the proportion of persons aged 2 years and older who consume at least three daily servings of vegetables, with at least one-third being dark green and orange vegetables.

Only 17% of South Dakota high school students ate the minimum five or more servings of fruits and vegetables per day during the past seven days which is 5% below the national average. The national recommendation for fruit and vegetable intake is that 75% will consume the minimum of five servings. According to the 2003 Youth Risk Behavior Survey (YRBS), 32% of high school boys drank three or more glasses of milk per day during the past seven days compared to only 17% of high school girls. Also 51% of these adolescents ate breakfast four or more times during the past seven days.

Anemia is defined as having low hemoglobin (Hb) concentrations or hematocrit (Hct) values when measuring a healthy reference population of the same age. PedNSS uses a hemoglobin and/or hematocrit value below the 5th percentile of the third National Health and Nutrition Examination Survey (NHANES III) reference population. Iron-deficiency anemia is associated with delayed psychomotor development, cognitive deficits, and behavioral disturbances in young children.

Healthy People 2010 Objective

19-12. Reduce iron deficiency among young children.
- Children aged 1 to 2 years to 5%
- Children aged 3 to 4 years to 1%

The percent prevalence in South Dakota's PedNSS population with anemia was 7.6% in 2003 – up from 6.5% in 2001. The percent of the South Dakota PedNSS population with anemia was 7.0% over the three-year period 2001-2003.

The percent prevalence of children with anemia by race or ethnicity in South Dakota's 2003 PedNSS population was 6.6% for Whites, 8.4% for Blacks, 9.8% for American Indians or Alaskan Natives, and 14.4% for Asian or Pacific Islanders. The age breakdown for this population was: less than one year - 10.3%, 1 through 2 years - 7.9%, and 3 through 4 years of age - 5.1%.

Healthy People 2010 Objective

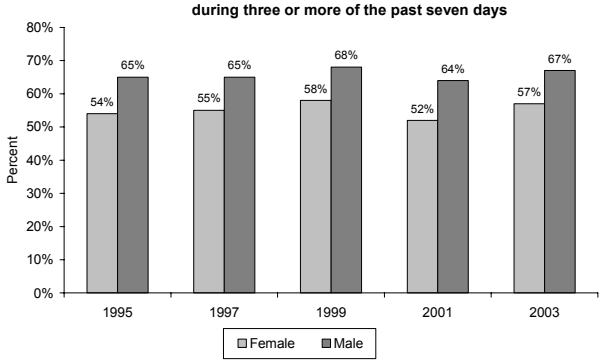
22-7. Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 ore more days per week for 20 or more minutes per occasion.

According to the 2003 YRBS, 34% of high schools students in South Dakota reported they did not participate in at least 20 minutes of vigorous physical activity on three or more of the past seven days and did not do at least 30 minutes of moderate physical activity on five of the past seven days (see Figure 23).

Nine percent reported they did no vigorous or moderate physical activity during the past seven days.

Only 27% of students went to physical education class on one or more days in the average school week compared to 56% nationally. For those enrolled in a physical education class, 86% of them did exercise or play sports for more than 20 minutes of an average class. The majority of South Dakota high school students play on at least one sports team (65%).

Figure 23.
South Dakota adolescents who exercised or participated in physical activities for at least 20 minutes that made them sweat and breathe hard during three or more of the past seven days



Source: South Dakota Youth Risk Behavior Survey

Healthy People 2010 Objective

22-11. Increase the proportion of adolescents who view television 2 or fewer hours on a school day.

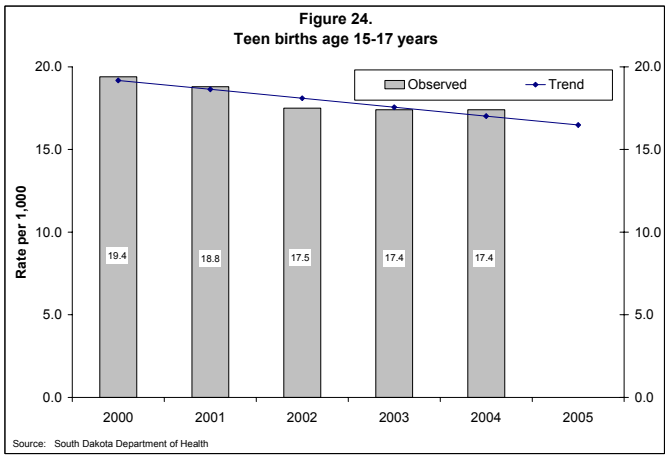
Nationally 62% of high school students watch two or more hours of television on an average school day while in South Dakota 53% percent report doing so.

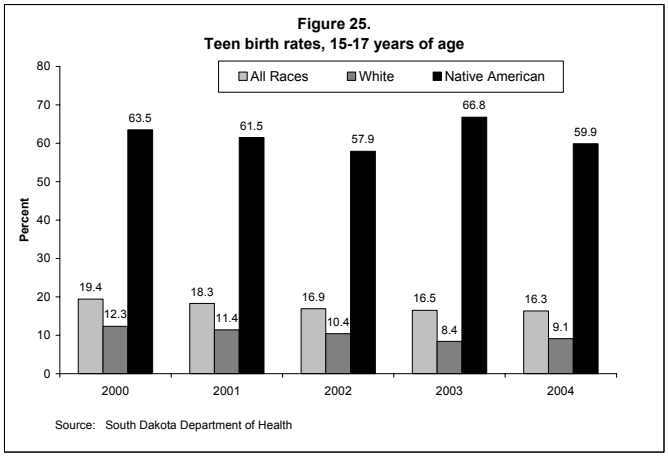
Healthy People 2010

9.7. Reduce pregnancies among adolescent females to 43 pregnancies per 1,000 females aged 15 to 17 years.

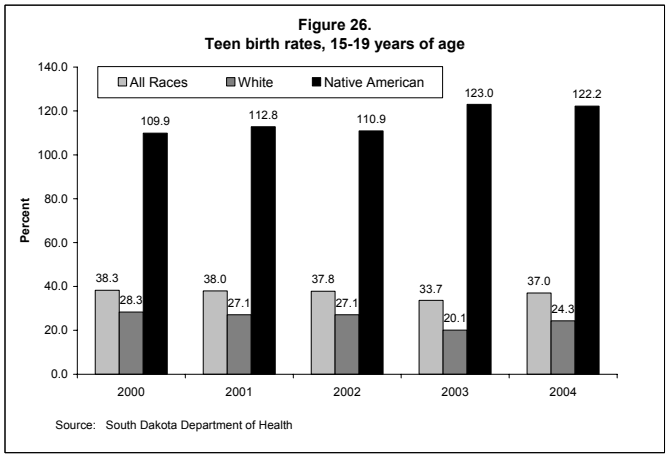
The rate of births among South Dakota's young women 15-17 years of age decreased 10% over the five year observation period of 2000 to 2004. In 2000, there were 19.4 births per 1,000 women aged 15-17 compared to a rate of 17.4 per 1,000 in 2004 (see Figure 24).

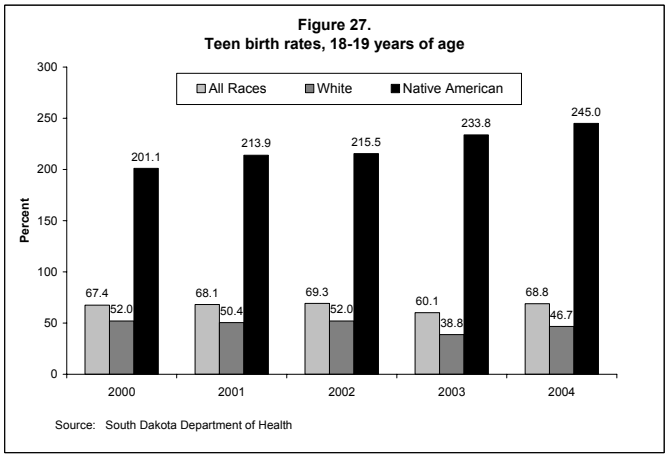
The Department of Health 2010 Initiative objective is to reduce the pregnancy rate among teen women 15-17 years of age to 15 by 2010. When looking at teen pregnancy rates for all races, the goal of reducing the birth rate to 15 by 2010 appears feasible. However, when looking at the teen birth rate of Whites and Native Americans, there is a great disparity (see Figure 25). It is essential efforts be directed at reducing the rate among Native Americans.





When looking at the overall birth rate among women aged 15-19 years of age, it would appear as if the birth rates are remaining about the same (see Figure 26). However, when looking at the birth rate for 18-19 year olds, the rate for Native Americans is actually increasing (see Figure 27). It needs to be determined if these pregnancies are intended or unintended as the strategies for addressing would differ.





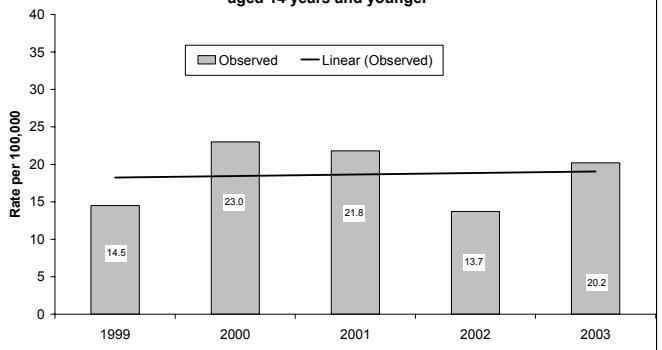
According the 2003 YRBS, 42% of students reported they have had sexual intercourse. This percentage has remained between 40-45% since 1995. Only 21% of sexually active students reported either they or their partner had used birth control to prevent pregnancy during last sexual intercourse.

Healthy People 2010 Objective

15-13. Reduce deaths caused by unintentional injuries to 17.5 deaths per 100,000 population.

In South Dakota, unintentional injuries are a leading cause of death among our children (aged 0-14 years). The death rate of South Dakota children 14 years and younger fluctuated between 1999 and 2003, without a distinct decreasing or increasing trend (see Figure 28). The highest rate was in 2000 with 23 unintentional injury deaths per 100,000 and the lowest rate was in 2002 at a rate of 13.7. Data is not currently available to identify the cause of these unintentional injuries. It is hoped that patient data from the South Dakota Association of Healthcare Organizations will eventually provide insight as to the cause of the injuries.

Figure 28.
Death rate per 100,000 due to unintentional injuries among children aged 14 years and younger



Source: South Dakota Department of Health

Unintentional motor vehicle deaths increased 38% among South Dakota children 14 years and younger during the observation period.

Healthy People 2010 Objective

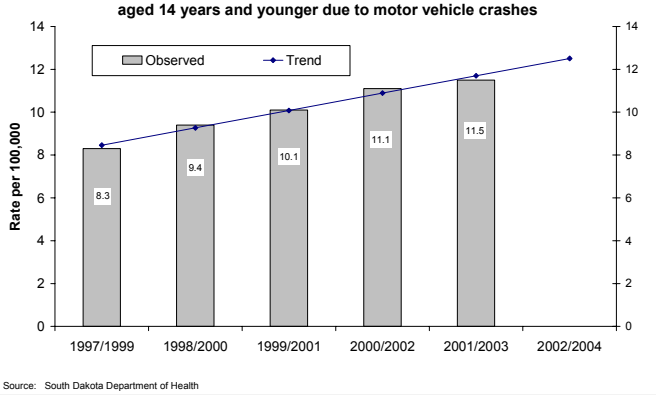
15-15. Reduce deaths caused by motor vehicle crashes

- Children aged 14 years and under to 4.4 per 100,000 population
- Persons aged 15 to 24 years to 26.4 per 100,000 population

The death rate increases for each period of three-year averages between 1997/1999 period and the 2001/2003 period (Figure 29). The rate for the former period is 8.3 deaths 100,000, which increases to 11.5 deaths in the later period.

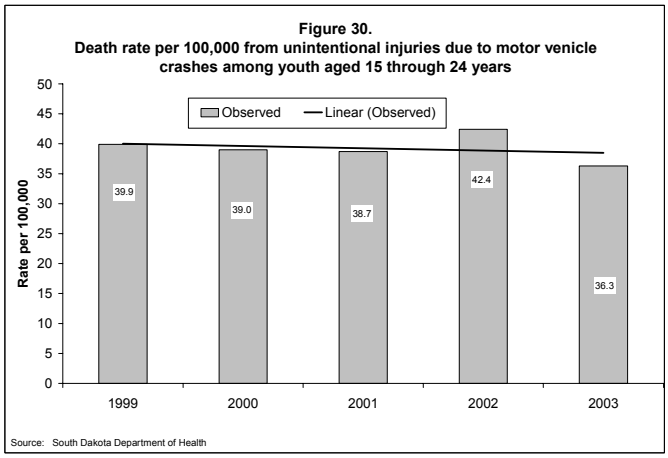
The number of motor vehicle deaths attributed to crashes in youth age 0-14 is 18 per year (average from 2001-2003) for a rate of 11 children per 100,000. The rate of motor vehicle crashes resulting in death has remained steady since 2000. The fluctuation in the population has been accounted for in the statistical analysis, therefore the deviation in the rates from 2000-2003 are statistically insignificant.

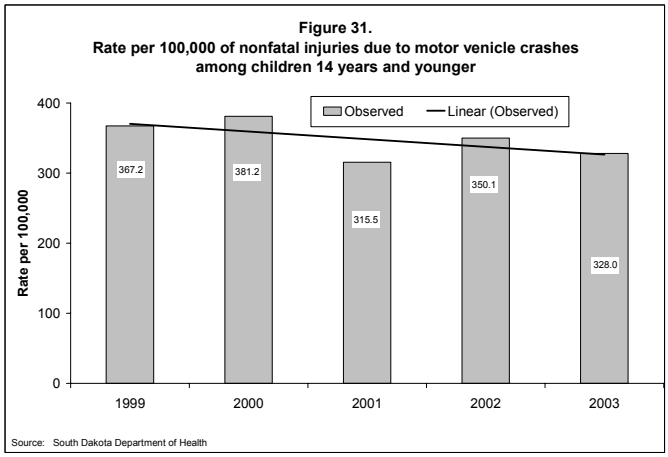
Figure 29.
The death rate per 100,000 for unintentional injuries among children aged 14 years and younger due to motor vehicle crashes

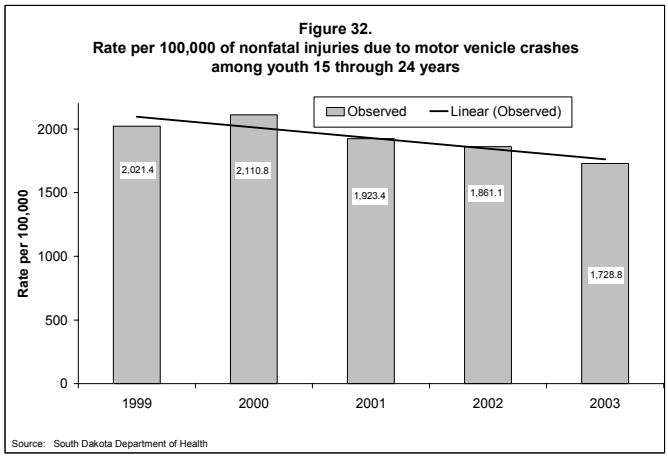


Source: South Dakota Department of Health

There was little change in the death rate due to unintentional motor vehicle crashes among South Dakotan 15 to 24 years old. During the five-year observation period the death rate was highest in 2002 at 42.4 deaths per 100,000 and lowest in 2003 at a rate of 36.3 (Figure 30).







A decreasing rate of nonfatal motor vehicle crash injuries was observed during the years 1999 to 2003 among South Dakota children 14 years and younger. The rate was highest in the year 2000 with a rate of 381 injuries per 100,000 and lowest in 2001 with an injury rate of 315 (Figure 31).

There was a decreasing rate of nonfatal motor vehicle crash injuries during the years 1999 to 2003 among South Dakotan 15 through 24 years. The rate was highest in the year 2000 with a rate of 2,111 injuries per 100,000 and lowest in 2003 with an injury rate of 1,729, which is a decrease of 18% (Figure 32).

South Dakota law requires the driver of any passenger vehicle transporting a child under five years of age and less than 40 pounds to secure that child in an approved child safety seat. If the child weighs 40 pounds or more, the child can be secured in a seat belt instead of a safety seat. All children 17 years and younger must wear a seatbelt, irregardless of their seating position in the car. The state law applies to state and federal highways running through Indian reservations. While the majority of the reservations have primary or secondary laws regarding seat belt/child safety seat use, there are two reservations with no such laws. Enforcement of existing seat belt/child safety seat laws on reservations is questionable.

In 2005, the South Dakota Department of Public Safety's (DPS) Office of Highway Safety collaborated with local, state, federal, and tribal agencies to develop a statewide strategic plan to enable local/state agencies and non-profit organizations to develop and implement traffic safety policies to reduce motor vehicle crashes, fatalities and injuries. The 2005 Highway Safety Plan has identified the following priority areas:

- **Alcohol and Drugs –** Drinking and driving is a major contributing factor in motor vehicle crashes for all ages. In the past five years, 31% of the drivers involved in a fatal motor vehicle crash had alcohol as a contributing factor. Of the 299 alcohol-related fatalities, 81

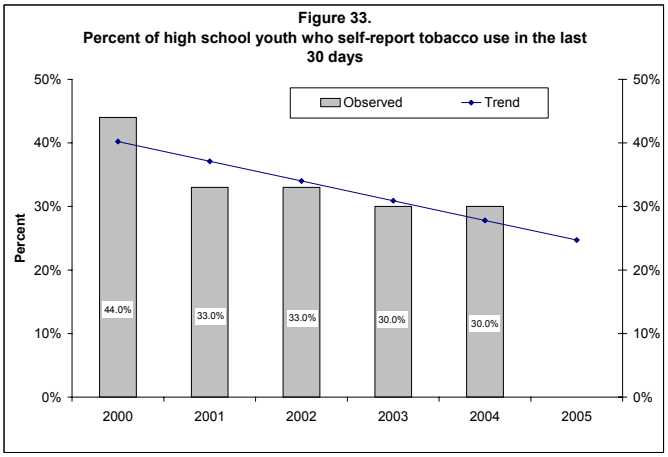
(27.1%) were under the legal drinking age of 21. To reduce the availability of alcohol to underage youth and strictly enforce traffic laws continues to be a primary focus in South Dakota's highway safety strategies.

- **Occupant Protection –** Non-use and misuse of restraint systems continues to be a significant cause of vehicle-related injuries and fatalities in South Dakota. Crash data confirms that 79.5% of South Dakota fatalities were not secured in a seat belt or child safety seat. The 2004 seatbelt survey documents seatbelt compliance of youth under age five at 72.3% and youth 5-17 years of age at 50.5%.
- **Motorcycle Safety –** On average, 16 motorcyclists are killed and 421 injured annually on South Dakota roadways. While the rate of highway fatalities has remained fairly constant in South Dakota, nationwide motorcycle fatalities and injuries have risen significantly over the past several years. The annual Sturgis Motorcycle Rally challenges South Dakota not only to address education and awareness, but to develop strategies to enhance the safety of hundreds of thousands of visiting motorcycle enthusiasts participating in the Rally. South Dakota does not have a mandatory helmet law.
- **Drivers Education –** Historically novice drivers represent the highest crash rate of any driver group. Young drivers are overrepresented in fatality and injury crashes. The young driver is associated with a distinctive set of safety issues that need to be addressed. The lack of driving experience, immaturity, and youth drinking are all contributing factors to the higher crash rate. In South Dakota, a young driver may be licensed at 14 years of age. In fatal and injury crashes involving 14-16 years old drivers, approximately 12% involved speed.
- **Commercial Motor Vehicles –** When a heavy truck and smaller passenger vehicle are involved in a motor vehicle crash, there is a higher probability of severe injuries or fatalities to the occupants of the passenger vehicle. Annually, South Dakota averages approximately 442 injuries and 22 fatalities involving commercial motor vehicles.

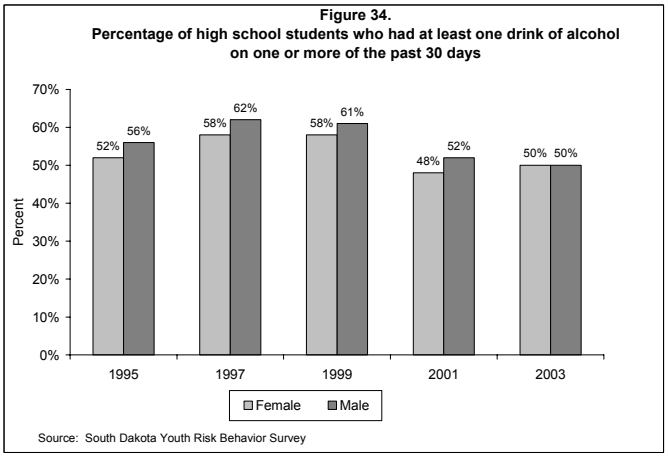
Healthy People 2010

27-2. Reduce tobacco use by adolescents.
- Cigarettes to16%
- Spit tobacco to 1%

Since 1999, YRBS data are indicating a decline in youth tobacco use (see Figure 33). Results of the 2003 YRBS indicate that 30% of all South Dakota teens in grades 9-12 are smoking cigarettes which is a vast improvement from 44% in 1999. The 2008 goal is to decrease that percentage to 27%. Spit tobacco use is not as heavily reported on the YRBS. Currently 15% of South Dakota teens use spit tobacco. The current rate has remained the same since 2001. The 2008 goal is to decrease usage to 8%.



According to the 2003 YRBS, 76% of respondents admitted to having at least one drink on one or more days of their lives while 25% of respondents had drank alcohol prior to age 13. One half (50%) of respondents reported having at least one alcoholic drink during the past 30 days (see Figure 34) while 38% had five or more alcoholic drinks in a row during the past 30 days.



According to FY04 Department of Human Services data, there was an overall 19% increase in individuals seeking treatment specific to methamphetamines use/abuse. Nine percent of adolescents placed for treatment of substance use had a diagnosis related to meth abuse/dependence and, of those, 50% used meth intravenously. An anomaly noted is that young users in particular began their use with needles. Traditionally, individuals were at the end of their use continuum when beginning IV use. It could be expected that at some point this anomaly could translate to increased rates of hepatitis B, HIV/AIDS, etc. among young people. What is known about treating meth clients is that they need much longer detox interventions, intensive treatments and long-term aftercare, support and case management services.

According to the 2003 YRBS, 2% of respondents said they had ever used a needle to inject any illegal drug into their body on one or more times during their life. Thirty-seven percent had used marijuana, 11% had sniffed glue or other products to get high, 7% had used cocaine, 7% had used methamphetamines, 5% had used ecstasy, and 3% had used heroin. In addition to morbidity and mortality due to injury, drug use is related to suicide, early unwanted pregnancy, school failure, delinquency, and transmission of STDs (including HIV infection).

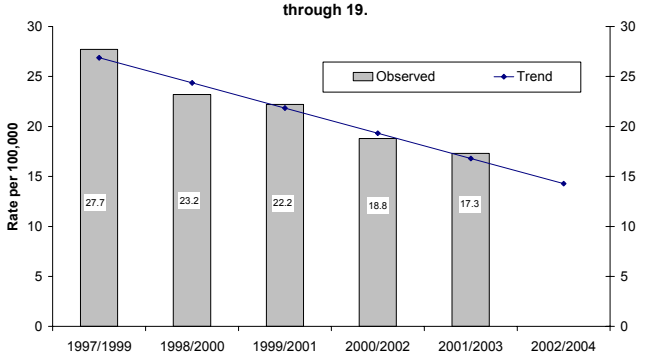
Healthy People 2010 Objective

18.2. Reduce the rate of suicide attempts by adolescents to a 12-month average of 1 percent.

The teen (age 15-19) suicide rate in South Dakota has steadily decreased 35% during the observation period. Since the state has less than 20 teen suicides per year (median 11 from 1997 to 2003), the data are grouped in units of three-years for comparison.

The rate of teen suicides decreased each successive three unit starting with a high rate of 27.7 suicide deaths in the 1997-1999 period to a low rate of 17.9 in the 2001-2003 period (Figure 35).

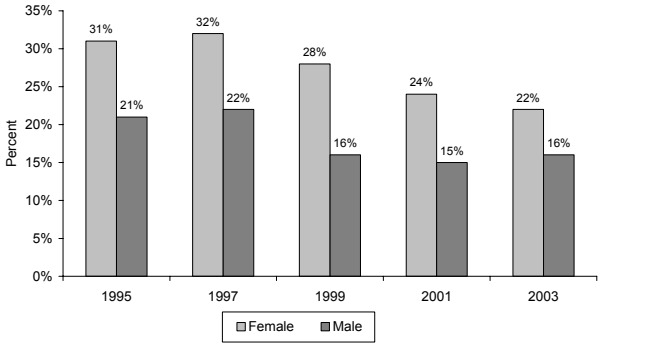
Figure 35.
The rate (per 100,000) of suicide deaths among youths aged 15 through 19.



Source: South Dakota Department of Health

The 2003 BRFSS asked questions to measure sadness, suicide ideation, attempted suicides, and the seriousness of those attempts. In 2001, 14.8% of high school students had made a specific plan to attempt suicide and 8.8% had attempted suicide one or more times in the past year. From 1999 to 2003, the percentage of high school student who seriously considered suicide decreased from 29% to 19% (see Figure 36). This data shows consistently for each grade that females had a higher percentage than males. In 2003, 25% of YRBS respondents indicated feeling so sad or hopeless almost every day for two weeks or more in a row that they stopped doing some usual activities. Again, this data shows consistently for each grade that females have this feeling more than the males (31% vs. 18%, respectively).

Figure 36.
Percentage of high school students who had ever seriously considered attempting suicide during the past 12 months



Source: South Dakota Youth Risk Behavior Survey

Children and young adults who are contemplating or, worse, attempting suicide often have problems in multiple areas of life, including family and social relationships, academics, and/or law enforcement. The main contributing factors to suicide are poorly treated mental illness and the abuse of alcohol and drugs. A 2001 National Institute of Mental Health reports "research has shown that more than 90% of people who kill themselves have depression or another diagnosable mental or substance abuse disorder".

Based on 2000 census information, estimates of youth (0-17) with serious emotional disturbance (SED) statewide were generated by Adams, Mohatt, and McGee (2003) and are presented in Table 15. The percent of youth identified as having SED is similar across age and gender,

however, as income decreases, percentages increase. In terms of ethnicity, Native American youth are the second largest group and have the third highest percent of SED.

Table 15.
Estimates of Serious Emotional Disturbance in South Dakota Youth

	Cases	Pop.	%		Cases	Pop.	%
Youth Total				**Ethnicity**			
	15,453	202,649	7.63%	White	11,953	163,354	7.32%
Age				Native American	2,454	27,049	9.07%
0-5	4,698	61,352	7.66%	Multi-Ethnic	412	4,742	8.69%
6-11	5,210	67,547	7.71%	Hispanic	370	4,521	8.18%
12-17	5,545	74,750	7.52%	African American	139	1,554	8.95%
Gender				Asian	102	1,224	8.34%
Male	7,889	103,961	7.59%	Pacific Islander	7	61	11.98%
Female	7.564	98,688	7.66%	Other	15	144	10.64%

Among those who chronically abuse alcohol, it is estimated that as many as 15% may eventually kill themselves, and those who abuse drugs have a risk of suicide as much as 20 times higher than that of the general population (Faulkner, 1997). A 2000 study by the National Center on Addiction and Substance Abuse found that the rate of drug, alcohol, and nicotine use among teens in rural America is now higher than the nation's large urban centers. According to the 2002 National Survey on Drug Use and Health (Wright, 2004), South Dakota:

- Ranks in the top 20% of states for the prevalence of alcohol dependence or abuse;
- Ranks in the top 20% of states in the number of people who need but do not receive treatment for alcohol problems;
- Is among seven states where 12 to 17 year olds were in the top 20% in the use of both marijuana and other illicit drugs; and
- Is among three states that were in the top 20% for all age groups (12-17, 18-25, 26-older) when it comes to the prevalence of binge drinking.

According to the President's *New Freedom Commission on Mental Health, Subcommittee on Rural Issues* report:

- Although rural Americans' prevalence and incidence of mental disorders is comparable to their urban counterparts, they are much less likely to have access to services or providers;
- Rural teens and rural older adults have a much higher rate of suicide than their urban peers;
- Rural residents are less likely to have health insurance with a mental health benefit, and financial resources available to support mental health systems are less robust;
- Programs to specifically train and promote the placement of rural mental health professionals are not available, and those that do exist are often not located in rural areas.

South Dakota is not an exception to the rule regarding mental-health care in rural America. The final report of the South Dakota Children's Mental Health Task Force outlined critical shortages in family support, school-based mental health services, intensive in-home family therapy, wraparound services, and early identification and screening. The least available providers in South Dakota are psychiatrists, psychologists, and family therapists (WICHE, 2003).

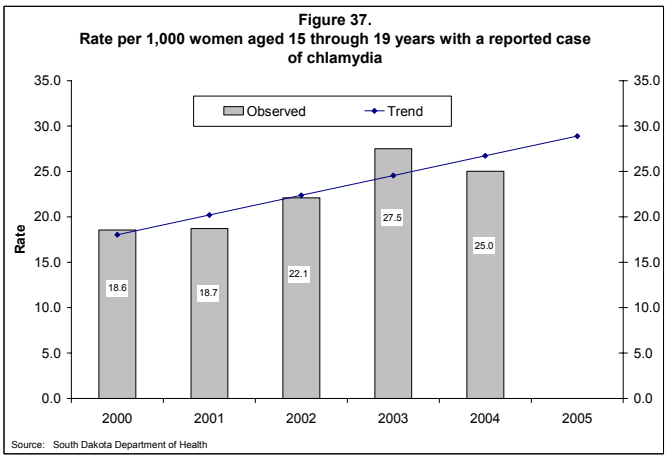
All but 11 of South Dakota's 66 counties are officially designated by the U.S. Department of Health and Human Services as Mental Health Professional Shortage Areas (MHPSA). The MHPSA designation is given to counties that lack adequate core mental health professionals (defined as psychiatrists, clinical psychologists, clinical social workers, psychiatric nurse specialists, and marriage and family therapists). A survey of workforce status indicates that the state has:

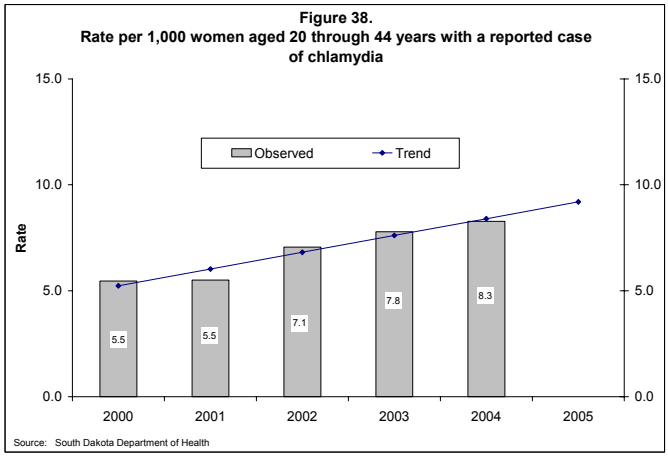
- 5.5 psychiatrists/100,000 population (ranked 45th; national average = 11.1);
- 17.8 psychologists/100,000 population (ranked 45th; national average = 31.2); and
- 279 social workers/100,000 population (ranked 12th; national average = 216) (HRSA, 2000).

Finally, one of the most insidious barriers to pursuing mental health care services is the stigma associated with seeking help for mental, emotional, or behavioral problems, which is often more pronounced in rural areas. Embarrassment about seeing a mental health care professional, combined with the lower number of caregivers, also results in primary health care providers being the dominant providers of mental health care in rural areas which increases the need for more specialized training among general health care practitioners, as well as the need for improved collaboration and referral mechanisms among primary care, addiction recovery, and mental health care systems.

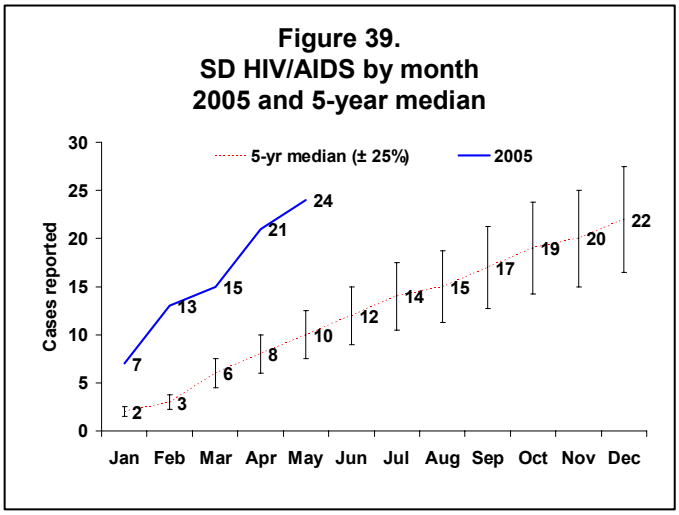
Chlamydia is the most commonly reported sexually transmitted disease in South Dakota During 2004 the DOH received 2,534 case reports of Chlamydia infection, which is an incidence rate of 3.35 per 1000 population overall. This was an increase of 38% over the five-year median. South Dakota's overall Chlamydia rate ranked twelfth nationally in 2003.

The rates of Chlamydia infection in young women increased during the five-year period, 2000 to 2004. The rate among women 15-19 years old increased 34% during this period from 18.6 cases per 1,000 women in 2000, to 25.0 cases per 1,000 in 2004 (Figure 37). Likewise, the rate among women 20-44 years old increased 51% from 5.5 cases per 1,000 in 2000, to 8.3 cases per 1,000 in 2004 (Figure 38). Chlamydia was most pronounced among American Indians with 48% of cases reported in 2004, compared to 48% among Whites and 4% among all other races.





Gonorrhea trends in South Dakota have remained relatively stable over the past five years. Small increases reflect both localized outbreaks and the increased sensitivity/acceptability of currently available urine-based testing. The male to female ratio of cases reported has increased slightly, indicating some improvement in the diagnosis of male cases. During 2004, 304 cases were reported, of which 178 females and 126 males. Seventy-eight percent of females and 60% of males were Native American. Approximately 63% were individual 24 years of age or younger. The majority of gonorrhea cases were among residents of only five cities or Indian reservations in the state – Rapid City, Sioux Falls, Pine Ridge Indian Reservation, Rosebud Indian Reservation, and Cheyenne River Indian Reservation.



According to the January 2005 South Dakota HIV/AIDS surveillance report, 462 cumulative cases of HIV/AIDS were reported to the DOH from 1985 through December 2004. Nineteen new HIV/AIDS cases were reported from January 1, 2004 through December 31, 2004. Thirteen cases

were male and six cases were female. The first five months of 2005 indicate that HIV numbers are on the rise in South Dakota this year (see Figure 39). There are an estimated 261 people living with HIV/AIDS in South Dakota – 74% male and 26% female. Black and Native Americans are disproportionately affected by HIV/AIDS with Blacks comprising 15% of the cases and Native Americans 14%, compared to their comprising less than 1% and 8% of the population, respectively.

According to the 2003 YRBS, 42% of high school students reported having had sexual intercourse. Twelve percent indicated they had had sexual intercourse with four or more people. Sixty-five percent reported using a condom during their last sexual intercourse.

Children with Special Health Care Needs

The 2001 National Survey of Children with Special Health Care Needs paints a positive picture of access to care for this population of children. Overall, 95% of children with special health care needs (CSHCN) had health insurance at the time of the survey, 82% reported receiving all of the services they needed, and 89% had a personal doctor or nurse.

Consistent access to a wide range of services is particularly important for CSHCN, who have been defined as "...those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally."

This definition is one way of describing CSHCN for specific research and programs. It was developed by MCHB during 1994 and 1995. The definition is purposefully broad and inclusive, recognizing that children with many different diagnoses and conditions have some important, common needs. MCHB's goal in developing this definition was to help States carry out the mission given them under Title V of the Social Security Act to develop and implement comprehensive, community-based systems to serve children and families with special needs.

Highlights of Survey's Findings From 2001 National Survey of Children with Special Health Care Needs (CSHCN)

- Overall, 12.8% of children in the United States, or 9.4 million children, have special health care needs, based on the MCHB definition.
- CSHCN have varying degrees of impact on their ability to do things that other children of the same age do. Approximately 23% of CSHCN are usually or always affected in their activities by their conditions; 37% are sometimes affected; and 39% are never affected in their activities.
- Twelve percent of CSHCN were uninsured at some point during the year prior to the survey.
- Of those with insurance, the families of one-third say that their coverage does not meet their needs because of inadequate access to benefits or providers or unreasonable charges.
- Nearly 30% of parents of CSHCN report that they have had to cut back on work or stop working in order to care for their children.

Nationally, a total of 38,866 families of CSHCN were interviewed by telephone between October 2000 and April 2001. It should be noted that these findings are based on a sample survey, and while they are nationally representative, they are subjective and are based only on families' experiences and perceptions.

Another common characteristic of CSHCN is their need for access to a wide range of medical and support services to maintain their physical health, mental and emotional health, and development. The survey documents the breadth and extent of these needs, including prescription medications (needed by 88% of CSHCN), specialty medical care (51%), vision care (36%), mental health care (25%), specialized therapies (24%), and medical equipment (11%). Most CSHCN receive the services they need; however, 18% did not receive at least one service that they needed, as perceived and reported by their parents.

Families of CSHCN provide extensive support and care to their children, and they often need help as well. Nine percent of CSHCN live in families with a need for respite care, 7%

need genetic counseling, and 13% need family counseling to help deal with the stresses involved in having a child with special health care needs. Again, while the vast majority of families receive the services they need, 5% of families of CSHCN reported at least one family support service that they needed but did not obtain.

A variety of factors influence children's access to needed health and support services. One is the availability and adequacy of health insurance coverage. At the time of the survey, 5% of CSHCN had no insurance and 12% were uninsured at some time during the previous 12 months. In addition, the families of one-third of CSHCN with insurance find that this coverage is not always adequate to meet their needs, either because the benefits do not meet their needs, the charges are not reasonable, or they do not have access to the providers they need.

Another indicator of access to care is the presence of a usual source of care that families can turn to when their child is sick, as well as a personal doctor or nurse who knows the child and his or her particular needs. Again, while most CSHCN have a usual source of sick care and a personal doctor or nurse, some do not. Eight percent of CSHCN have no regular source of care when they are sick and 11% do not have a personal doctor or nurse.

In addition to being accessible, care for CSHCN should also be family-centered; that is, it should respect the family as the constant in the child's life and family members as the child's primary caretakers. To assure that care is family-centered, providers must spend enough time with the family, assure that they have the information they need, listen to the family's concerns, be sensitive to the family's values and customs, and make the parents feel like partners in their children's care. While a majority of children's care meets all of these criteria, the families of one-third of CSHCN report receiving care that does not.

A final set of indicators reflects parents' perceptions of the impact of having a child with a special health care need on the family's time, finances, and employment status. The financial impact of the care of CSHCN can be substantial – more than one in five CSHCN are in families who spend more than $500 per year on their care. Moreover, one in five CSHCN live in families where their condition has caused financial problems. These problems can be exacerbated if parents must stop working or cut their work hours to care for their children. Thirty percent of CSHCN have parents whose employment has been affected by their condition.

For purposes of determining the number of children under 18 years of age in South Dakota who have a chronic physical, medical or neuro-developmental condition and also use health or related services beyond those generally required by children, the state's CSHCN program will utilize 12% to determine incidence. According to the U.S. Census Bureau, there were 202,649 children birth through 17 years of age in South Dakota in 2000. Based on an incidence rate of 12%, it can be estimated that 24,317 children in South Dakota birth through 17 years of age have some type of chronic physical, medical or developmental condition and require health and related services of a type or amount beyond that required by children generally.

Family surveys are an ongoing way for South Dakota's CSHS program to learn about its population. In the fall of 2004, the Office of Family Health, in conjunction with SD Parent Connection, conducted a statewide Parent Survey asking questions specific to children in the household with a special health care condition. 927 responses were received with representation from every county in the state.

The South Dakota Respite Care Program is an interagency project administered by the Department of Human Services that is funded by several state and federal sources, including Title V and state general funds. Table 16 shows utilization of respite care services by primary diagnosis category.

Highlights of Findings from South Dakota's 2004 Parent Survey

- 94.3% of parents stated they are satisfied with their level of involvement with their child's health care team in making decisions about their child's health care needs.
- 83% of parents said that their CSHCN receive coordinated, ongoing, comprehensive care within a medical home.
- 77.5% of parents stated they had adequate private and/or public insurance to pay for the services they need.
- 69.6% of parents stated the community-based service system is organized for ease of use.
- 49.6 % of parents said they were satisfied with the services available to help their child transition to adult life.

Table 16
Children and Adults Receiving Respite Care by Diagnostic Group
June 2000 to May 2004

Diagnostic Category	06/1999-05/2000	06/2000 - 05/2001	06/2001-05/2002	06/2002-05/2003	06/2003-05/2004
Total					
Children and Adults	1,050	1,124	1,123	1,113	1,164
Families	810	834	803	785	814
Chronic Medical Condition	125	137	137	133	161
Developmental Delay	47	260	250	251	234
Developmental Disability	363	383	395	394	407
Families at Risk	5	17	29	49	76
Serious Emotional Disturbance	307	321	306	283	284
Severe & Persistent Mental Illness	3	3	3	1	2
Traumatic Brain Injury	NA	3	3	2	0

All eligible applicants were funded. Beyond the applications received, we were not able to determine the number of individuals who need, but are currently not receiving respite care services.

Taken together, this information paints a picture of an adequate system of care for CSHCN that meets the needs of the majority of these children. However, room for improvement still exists, especially where systems serve the most vulnerable children, such as those for low-income families and those who receive insurance coverage through public programs.

APPENDICES

Appendix A. Department of Health 2010 Initiative

Improve Birth Outcomes and Health of Infants, Children and Adolescents in South Dakota

- ❖ Promote early and regular prenatal care for South Dakota mothers
- ❖ Improve South Dakota's age-appropriate immunization rate
- ❖ Reduce risky behaviors among children and adolescents

Key Performance Measures

- ☐ Reduce the infant mortality rate from 6.5 per 1,000 births in 2003 to 6 by 2010
- ☐ Increase the percent of two-year olds who are age-appropriately immunized from 83.4% in 2003 to 90% by 2010
- ☐ Reverse the trend and reduce the percent of school-age children & adolescents who are overweight or obese from 17% in 2003 to 15% by 2010
- ☐ Reduce the teen pregnancy rate from 19 per 1,000 teens age 15-17 in 2003 to 15 by 2010

Improve the Health Behaviors of South Dakotans to Reduce Chronic Disease (i.e., heart disease, cancer, stroke, diabetes)

- ❖ Enhance data collection systems to assess the chronic disease burden in South Dakota
- ❖ Strengthen our ability to promote healthy behaviors
- ❖ Implement the *Healthy South Dakota Initiative* to help South Dakotans be physically active, eat healthy and live healthier lives

Key Performance Measures

- ☐ Reduce the percent of adults who are overweight or obese from 60% in 2003 to 55% by 2010
- ☐ Increase the percent of adults who are physically active on a regular basis from 45% in 2003 to 50% by 2010
- ☐ Increase the percent of adults who eat 5 fruits & vegetables a day from 19% in 2003 to 25% by 2010
- ☐ Reduce percent of adults who smoke cigarettes from 22.7% in 2003 to 18% by 2010

South Dakota Department of Health

Guiding Principles

Encourage Use of Technology
Emphasize Customer Service
Reduce Health Disparities
Work in Partnership

Strengthen the Health Care Delivery System in South Dakota

- ❖ Sustain a competent workforce
- ❖ Provide effective oversight and assistance to assure quality health facilities, professionals and services
- ❖ Sustain essential healthcare services in rural and underserved areas
- ❖ Encourage development and use of technology for the provision of healthcare services

Key Performance Measures

- ☐ At least 75% of vacancies for health professionals are filled each year
- ☐ Data from critical access hospitals shows at least 10% improvement in quality indicators for heart failure
- ☐ At least 20% of all South Dakota hospitals use electronic medical records

Advance South Dakota's Response to Emerging Public Health Threats

- ❖ Develop and maintain a standardized system for assessment and response of emerging public health threats
- ❖ Enhance the state's capacity to effectively manage emerging public health threats and emergencies
- ❖ Strengthen the department's capacity to respond to environmental health issues

Key Performance Measures

- ☐ Increase the percent of reportable diseases that are reported to the DOH within required time frames to 90%
- ☐ Increase the percent of health care providers and first responders who are trained to recognize and address emerging health threats to 75%
- ☐ Increase the percent of health care facilities that are able to perform key response activities to 100%

Performance Measures: **A** – Ahead **O** – On schedule **B** – Behind **C** – Completed

November 18, 2004

Improve Birth Outcomes and Health of Infants, Children and Adolescents in South Dakota

- Promote early and regular prenatal care for South Dakota mothers *(Darlene Bergeleen)*
  - Identify barriers to accessing early and regular prenatal care and work with health care providers to address the barriers
  - Increase public awareness of the importance of early and regular prenatal care and the impact life choices have on a healthy pregnancy and infant
  - Strengthen links between public programs serving pregnant mothers and primary care providers to improve birth outcomes
- Improve South Dakota's age-appropriate immunization rate *(Bonnie Jameson)*
  - Educate providers and the public about the importance of immunizations
  - Enhance the immunization registry to allow for real-time access to immunization data for all public and private immunization providers in the state
  - Utilize non-traditional avenues for providing childhood immunizations
- Reduce risky behaviors among children and adolescents *(Kayla Tinker)*
  - Enhance activities directed at reducing the incidence of childhood obesity
  - Enhance activities designed to reduce teen pregnancy and the rate of sexually transmitted diseases among adolescents
  - Work with other organizations and state agencies addressing child/adolescent issues (i.e., seatbelt use, suicide, alcohol/drug use)

Improve the health behaviors of South Dakotans to reduce chronic disease (i.e., heart disease, cancer, stroke, diabetes)

- Enhance data collection systems to assess the chronic disease burden in South Dakota *(Kathi Mueller)*
  - Work with partners to improve collection and timely access to disease/illness information
  - Enhance DOH data collection systems to improve the quality and timeliness of data
  - Improve accessibility and usability of DOH data and analysis
- Strengthen our ability to promote healthy behaviors *(Colleen Winter)*
  - Work with partners to develop a statewide plan for nutrition and physical activity
  - Enhance state- and community-based tobacco control efforts
  - Provide technical assistance and resources to assist individuals, families, communities, schools, employers, and health care providers in the promotion of healthy behaviors
  - Promote the development of policies that support healthy behaviors
- Implement the *Healthy South Dakota Initiative* to help South Dakotans to be physically active, eat healthy and live healthier lives *(Linda Ahrendt)*
  - Develop a *Healthy South Dakota* website
  - Conduct a public education campaign in support of the *Healthy South Dakota Initiative*
  - Utilize DOH as a model for workplace wellness programs and activities

Strengthen the health care delivery system in South Dakota

- Sustain a competent workforce *(Sandi Durick)*
  - Develop reliable healthcare workforce projections and plan for future healthcare workforce needs
  - Promote healthcare careers to school-aged children and young adults
  - Promote health profession recruitment and retention programs
- Provide effective oversight and assistance to assure quality health facilities, professionals and services *(Bob Stahl)*
  - Assure healthcare facilities meet minimum standards for quality
  - Enhance technical assistance, training, and resources for healthcare facilities and providers to meet identified needs
  - Work with health profession licensing boards to make information available to the public that is consistent, coordinated, understandable, and easily accessible
- Sustain essential healthcare services in rural areas and underserved areas *(Bernie Osberg)*
  - Promote and support health care planning at the community level to assure an integrated approach to healthcare
  - Assist communities identify resources for operation, maintenance and replacement of essential healthcare services
- Encourage development and use of technology for the provision of health services (*Ken Doppenberg/Doug Knutson)*
  - Support increased utilization of technology throughout the healthcare industry
  - Support continued development and enhancement of telemedicine for the provision of healthcare services
  - Support development and use of distance education for the healthcare workforce

Advance South Dakota's Response to Emerging Public Health Threats

- Develop and maintain a standardized system for assessment and evaluation of emerging public health threats *(Lon Kightlinger)*
  - Enhance the existing disease surveillance system for the rapid collection, analysis and identification of health threats and the timely dissemination of information
  - Develop and exercise state/local public health response plans
  - Routinely evaluate state/local response to disease outbreaks and other health threats
  - Clearly identify roles and responsibilities in the event of new and emerging health threats and disasters
- Enhance the state's capacity to effectively manage emerging public health threats and emergencies *(Bill Chalcraft)*
  - Assess and improve the safety and security of healthcare facilities
  - Provide education and training regarding new and emerging diseases
  - Identify, coordinate and train the state, local, private, and volunteer public health workforce
  - Identify state, local and regional healthcare facility capacity and essential equipment for response to a public health emergency
- Strengthen the department's capacity to respond to environmental health issues *(Dave Micklos/Mike Smith)*
  - Identify resources to support an environmental health capacity within the DOH
  - Clearly identify roles and responsibilities to address environmental health issues
  - Work with other organizations and state agencies addressing environmental health issues

APPENDIX B. PERFORMANCE AND OUTCOME MEASURES

National Core Performance Measures

1. The percent of infants who are screened for conditions mandated by their State-sponsored newborn screening programs (e.g., phenylketonuria and hemoglobinopathies) and receive appropriate follow up as defined by their State.
2. The percent of children with special health care needs age 0 to 18 whose families partner in decision making at all levels and are satisfied with the services they receive.
3. The percent of children with special health care needs age 0 through 18 who receive coordinated, ongoing, comprehensive care within a medical home
4. The percent of children with special health care needs age 0 to 18 whose families have adequate private and/or public insurance to pay for the services they need.
5. Percent of children with special health care needs age 0 to 18 whose families report the community-based service systems are organized so they can use them easily.
6. The percentage of youth with special health care needs who received the services necessary to make transition to all aspect of adult life.
7. Percent of children through age 2 who have completed immunizations for Measles, Mumps, Rubella, Polio, Diphtheria, Tetanus, Pertussis, Haemophilus Influenza, and Hepatitis B.
8. The birth rate (per 1,000) for teenagers aged 15 through 17 years.
9. Percent of third grade children who have received protective sealants on at least one permanent molar tooth.
10. The rate of deaths to children aged 14 years and younger caused by motor vehicle crashes per 100,000 children.
11. Percentage of mothers who breastfed their infants at hospital discharge.
12. Percentage of newborns who have been screened for hearing before hospital discharge.
13. Percent of children without health insurance.
14. Percent of potentially Medicaid-eligible children who have received a service paid by the Medicaid Program.
15. Percent of very low birth weight live births.
16. The rate (per 100,000) of suicide deaths among youths 15 through 19.
17. Percent of very low birth weight infants delivered at facilities for high-risk deliveries and neonates.
18. Percent of infants born to pregnant women receiving prenatal care beginning in the first trimester.

National Core Outcome Measures

1. The infant mortality rate per 1,000 live births.
2. The ratio of the black infant mortality rate to the white infant mortality rate.
3. The neonatal mortality rate per 1,000 live births.
4. The postneonatal mortality rate per 1,000 live births.
5. The perinatal mortality rate per 1,000 live births plus fetal deaths.
6. The child death rate per 100,000 children aged 1 through 14.

State Negotiated Performance Measures

1. Percent of women who smoked prior to pregnancy and report that they stopped during pregnancy.
2. The rate (per 1,000 live births) of children under age 1 who die as a result of Sudden Infant Death Syndrome.
3. Percent of pregnancies which are unintended (mistimed or unwanted) and result in a live birth or abortion.
4. Percent of high school youth who self-report tobacco use in the past 30 days.
5. Percent of school-aged children and adolescents who are overweight or obese.
6. Percent of children aged 2-5 who are overweight or obese.
7. Percent of infants who are breastfed at least 6 months.

State Negotiate Outcome Measure

1. The Native American infant mortality rate per 1,000 live births.